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ABSTRACT

This project explored the feasibility of using the correspondence study concept as a means of providing vocational education. A search of the literature supplied information on the past use of independent study programs in vocational education and other areas. Factors related to the acceptance, cost, and development of independent study programs were reviewed. A model, which recognized the stages of development for a correspondence study course, was established and used to facilitate the construction of an auto-mechanics correspondence course which was field tested with 33 students, the object being to determine the effectiveness of such independent study programs. By the conclusion of the project, students had not completed a sufficient number of lessons to determine the feasibility of the particular course. However, in responding to a follow-up questionnaire, students cited two main disadvantages of the program as being: (1) The problem of acquiring tools, and (2) the lack of immediate feedback for questions and completed lessons. Other conclusions, recommendations, and a 11-page bibliography are also given. Appendices contain a list of vocational correspondence courses available from different institutions, recommended subjects for vocational correspondence study courses, and the questionnaires used in the project. (Author/RG)

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THE DEVELOPMENT AND FIELD TESTING OF AN INDEPENDENT STUDY PROGRAM IN VOCATIONAL EDUCATION

-- A Feasibility Study --

December, 1975

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INTRODUCTION

The need to offer vocational instruction to all individuals who can benefit and profit from it is a goal that is continually being sought by the Indiana State Board for Vocational and Technical Education. In recognition of this need the SBVTE has recognized the fact that all students cannot be served by a single educational delivery system. Therefore, programs have and continue to be offered in comprehensive high schools; area vocational centers; post secondary trade and technical schools; and in higher education institutions such as colleges and universtities. Yet, with the many programs available, less than 30 percent of the high school age students in Indiana schools are receiving vocational instruction. Additionally, an even smaller percentage of students enrolled in post secondary and higher education programs are receiving occupational training. While it may be argued that more than this small percentage of students do not desire vocational education, it would be more accurate to conclude that many students do not have the opportunity to obtain such instruction. Geographic inaccessibility, financial and available time restrictions, transportation inavailability, and the desire to receive vocational instruction in a field not being taught at a nearby vocational school are but some of the factors that would keep students from receiving the instruction they desire and need.

In an effort to circumvent some of the aforementioned problems and expand the availability of vocational education to more students the SBVTE has authorized and funded this feasibility study which explores the feasibility of using the correspondence study concept as a means of providing vocational education.

Statement of the Problem

It is encumbent upon the Indiana State Board for Vocational and Technical Education to provide quality vocational education instruction to as many people as possible within the state's financial and resource capabilities. To satisfy this obligation divergent strategies for providing vocational instruction need to be explored. This project was designed to investigate the feasibility of one such alternative strategy -- the correspondence or independent study approach -- and to develop a prototype vocational course to test the appropriateness of the concept.

Objectives

Specifically, the objectives of this feasibility study were to:

1) Explore viable alternatives for providing vocational education on an independent study basis.

2) Identifying vocational education course areas where independent study could be used.

3) Suggest a system or plan, whereby an independent study program may be infused into the existing vocational education pattern in Indiana.

4) Develop and field test a prototype independent study course in a vocational education subject area.

5) Determine the feasibility of the vocational education independent study concept by analyzing selected demographic and operational factors, eg. potential enrollment, cost, acceptance, infusion into the present system, and field test results.

Procedures

To accomplish the project objectives the following procedures were followed:

1) Related literature and research were synthesized in the area of independent learning theory and applied to the development of a model used to guide the project.

2) The State Division of Vocational Education and local educational agency personnel were consulted regarding alternatives to school based vocational instruction.

3) A survey was taken of the various education agencies (secondary, post-secondary and higher education) to 1) identify schools which could integrate an occupationally related independent study program into their offerings, 2) secure reactions from agency personnel regarding appropriate vocational course areas and 3) collect information relating to the feasibility of the concept.

4) The Indiana University Independent Study Division staff was consulted to help in developing a model to promote the concept and circumvent some of the associated problems identified in the feasibility study section of the project. The I.U. Independent Study Division did serve the project in an advisory capacity only.

5) After a hypothetical model for the program had been constructed, a prototype course for automotive mechanics was developed for field testing on a limited size sample population. This prototype course was used to test the operationality of the concept and to assess student achievement when learning via independent study.

6) Dissemination of the prototype course was made through the I.U. Independent Study Division.

Project Outcome

The report provides data regarding how an independent learning program may be established in Indiana and the value of such a program based on results derived from the feasibility study. It is hoped that this information will be useful to vocational educators in the development of new innovative vocational programs throughout the state.

A PERSPECTIVE ON CORRESPONDENCE STUDY

History and Background

The process of providing instruction via correspondence apparently began in Europe much before being accepted and utilized in the United States. However, the influences which encouraged the development of correspondence instruction in both locations were basically the same; the desire to offer training and education to more than a select few or elite and the need for instruction in colleges and universities which would prepare individuals for entry into occupations other than the "professions." Correspondence instruction on both locations provided a way of breaking down educational barriers and expanding or broadening the existing available curricula.

Many quasi-correspondence study programs were initiated in the United States between 1865-1890. A forerunner in the correspondence study education movement was Anna Eliot Ticknor who founded and operated the Society to Encourage Study at Home in Boston from 1873 to 1897. Her pioneering efforts in the field were directed toward exchanging letters between the students and teacher with periodic tests and guided reading as integral parts of the instruction. The curriculum consisted of twenty-four subjects in six different areas--history, science, art, literature, French and German and served mostly women students who were at that time demanding recognition and access to higher education (MacKenzie, 1968).

An early agency that offered correspondence instruction was established in a denominational institution. Illinois Wesleyan University, began non-resident instruction in 1874, offering correspondence instruction that not only led to a Bachelor's degree but to the M.A. and the Ph.D. as well. The Illinois Wesleyan program soon collapsed as it failed to convince its critics that correspondence instruction was a viable medium equivalent to

more traditional techniques. Other institutions of higher education refused to recognize a degree granted to a person who studied exclusively by correspondence and all correspondence programs offered by Illinois Wesleyan were phased out by 1910 (Curtis, 1965).

Correspondence schools of a propriety nature began in the U.S. toward the end of the 19th century when jobseekers needed to meet the requirements of Pennsylvania mine safety legislation which required mine inspectors and superintendents to pass a qualifying state examination. A smalltown newspaper editor, Thomas J. Foster, printed booklets to ready applicants for the test and provided questions for applicants to answer to test their grasp of the material. The answers were then sent to the newspaper for grading and comment. This rudimentary beginning was the start of what was to eventually become a million dollar a year business. Foster's early success with this venture led to other courses in mining legislation, coal geology, mining methods, mine surveying, and mapping. Courses sold for $25 and students had up to 3 years to complete their work. Eventually courses in other trade and business areas emerged: steam engineering, electricity, architecture, plumbing, sheet metal pattern making, drafting, civil engineering, heating, bookkeeping, stenography, etc.

In 1890 Foster organized the International Correspondence School (ICS) as an outgrowth of The Colliery Engineer, a newspaper Foster had formed in Scranton, Pennsylvania. By 1965, the ICS had served more than 7,000,000 students both domestically and overseas (Clark, 1965).

As early as 1924 over 2,000,000 persons were enrolled in propriety school correspondence courses. Five percent were enrolled in cultural and liberal arts; 40 percent in technical and vocational courses other than business. 40 percent in business and 15 percent in personal efficiency courses of some type.

A profile of the student body of 1924 revealed that: 1) the median age was 26, in a range from 20-34, 2) 61 percent had a high school education or beyond, 3) vocational backgrounds were primarily in business, and 4) most of the students lived in cities of a population between 2,500 and 100,000 (Noffsinger, 1926). Rossi and Johnstone (1965) reported virtually the same findings some 40 years later.

Several other propriety type correspondence schools emerged at about the same time as Foster's venture with the ICS. The American School was chartered in Massachusetts in 1895 as a non-profit organization. Later the American School was relocated in Chicago where it continues to operate. The LaSalle Extension University, another early private correspondence school, emerged about the same time as the American School. The American School provides vocational and general education course work to over 100,000 students and has been referred to as the largest high school in the world from the stand point of enrollment.

Early experiments with correspondence study had set the stage for development of the Correspondence University in 1883. The Correspondence University was comprised of twenty-two professors from different colleges and universities around the nation with a base of operation in Ithaca, New York. Educators of this period recognized the need for expanded offerings and non-resident instruction appeared to be a way of satisfying this need. The Correspondence University was short lived as it had neither a state charter in New York, the state it operated in, nor was it capable of granting degrees. The intent of the institution was to supplement and enrich the offerings of existing schools, however, a poor organizational structure and a lack of students apparently contributed significantly to its demise (Bittner and Mallory, 1933)

The first person to recognize and conduct a university correspondence program of real significance was William Rainey Harper. His work as a teacher in the Baptist Theological Seminary in Morgan Park, Illinois led to the development of correspondence courses in languages and theology for students who could not attend the seminary. Harper was later appointed President of the University of Chicago where he incorporated a university extension division consisting primarily of a correspondence study department. This correspondence study department continued to provide non-resident services until 1964 when it was phased out. Students using correspondence study matriculated in the same fashion as in-school students and could pursue 18 of the 36 majors available at the university by correspondence. The first year there were 82 students in the correspondence study department and 39 course areas. By 1930 the program had grown to 6,100 students, 459 courses and 145 instructors. The correspondence approach was also well suited for resident students who: 1) could not complete courses due to illness or calamity, 2) had financial or domestic obligations which would preclude them from taking a full resident course load, 3) had scheduling difficulties and/or 4) desired to retake a course that utilized a different instructional method (Bittner and Mallory, 1933).

The first twenty years of this century was a period of significant growth in university based correspondence study. Many universities across the nation incorporated correspondence programs into their offerings on a permanent basis: Wisconsin (1906), Oregon (1907), Kansas (1909), Minnesota (1909), Nebraska (1909), Texas (1909), Missouri (1910), and North Dakota (1910). By 1919 at least nineteen more correspondence study programs had been initiated including one organized by the Massachusetts State Department through a university extension agency. By 1933 there were 39 National

University Extension Association (NUEA) institutions offering correspondence study courses (Hall-Quest, 1926).

Another pioneer in the field of correspondence study education who shared the same enthusiasm and interest in correspondence as William Rainey Harper was W. H. Lighty at the University of Wisconsin. Lighty's appointment as Head of the Home Study Department in 1906 was prompted when the Wisconsin state legislature released a report that indicated over 35,000 Wisconsin citizens were spending over $800,000 annually for correspondence instruction, most of which went to propriety schools. The implications of this report were instrumental in the University of Wisconsin regents recommending expansion of the correspondence study program. Lighty believed that correspondence study could be instrumental in assisting adults to keep abreast of technological and cultural change and his experiments with radio and using correspondence study in factories went far to expand the versatility and use of the concept. Under Lighty's tutilage the University of Wisconsin was able to develop one of the nation's most extensive and advanced correspondence study programs (Axford, 1963).

The states have generally regarded their role in public education to be administrative, legislative, and regulatory leaving instructional and curriculum matters to elementary, secondary, and post secondary institutions. Consequently, most states have not developed correspondence programs that are operated directly by the state departments of education. Massachusetts has been an exception to this practice as it has supplied correspondence study materials since 1915 when the Extended Services Division was created by the Massachusetts State Legislature. The extension division departed from the norm in that it was responsible solely to the State Department of Education rather than to a state college, university, or equivalent state

institution. Teachers and course development personnel were secured from college, university, and high school faculties within the state with overall administration of the program being provided by the Massachusetts Department of Education. The program was reportedly self-supporting, requiring little outside support from the state legislature (MacKenzie, 1968).

North Dakota, Montana, Oregon, and Alaska have also had programs administered or supervised by an agency within the respective state's department of education. The agency's emphasis in these states has, however, been devoted to coordination rather than operation as it had been in Massachusetts.

The practice of using correspondence study materials in a supervised group setting, especially in small high schools, has been used spasmodically in the United States. The inability of small rural high schools to keep pace with divergent and rapidly changing curricular areas has been given as the prime justification for this approach. Sidney Mitchel, Superintendent of Schools in Benton Harbor, Michigan, is credited with the first use of supervised correspondence study in America. (Mathieson, 1971) Mitchel, in 1923, collaborated with the American School, a propriety correspondence school, to offer over 400 vocational courses for high school students. The concept never caught on to a great extent, except the rural midwestern states, where it did have a favorable reception. In 1965, 42 NUEA institutions reported having correspondence courses for high school level students. These courses, by and large, were designed for students on accelerated programs or students who had an interest in an area not taught in their respective high schools. The efforts of many states to consolidate smaller high schools; the establishment of state-wide agencies undoubtedly negated the once felt need for supervised and unsupervised correspondence study for high school level students.

For the most part, universities became leaders in high school correspondence instruction because neither the states nor the local school systems seemed capable of fulfilling the task (MacKenzie, 1968). A lone exception appears to have been the Phoenix Union High School. It supplied its own correspondence materials and achieved enough success that it became the center for correspondence instruction for the state of Arizona by 1936.

Article I of the Constitution has been interpreted as ruling our religious study in public supported schools. Therefore, public school children have had to seek religious and Biblical instruction elsewhere. In an effort to supplement instruction available in churches and synagogues many religious orders have prepared correspondence study programs. Generally, these programs have sought to: 1) educate laymen who wanted to increase their effectiveness in the church or enrich their life through Bible study, 2) train ministers, missionaries, or laymen for church work, and 3) to inform and spread church doctrine.

One of the earliest religious correspondence study schools was established in 1901 by the Moody Bible Institute and this school is still in operation. The Emmaus Bible School, another forerunner in correspondence Bible instruction, developed an international program translating its instruction into eighty different languages for dissemination throughout 125 countries. The Department of Ministerial Education of the Methodist Church maintains over a dozen theological seminaries in the United States and offers courses from the basic curriculum plus courses required for a ministerial license through its correspondence study division. A 1960 survey of Bible institutes and colleges in the United States and Canada revealed 32 home study departments with a total of 259,000 enrollees (Witmer, 1962).

The history of correspondence instruction in the military goes back to 1919 when correspondence courses were used by the United States Marine Corps

Institute (USMCI) to alleviate demoralization in the corps and to recruit higher caliber military personnel by providing educational opportunities to those who enlisted (Pearson, 1938). The USMCI instructional delivery model established by Generals J. A. Lejeune and S. D. Butler was soon duplicated by other service branches. Lt. Colonel William Harllee, who was entrusted with organizing the program, asked for and received assistance from the private International Correspondence School in developing the program. In January, 1920 the institute began by offering 14 courses of a vocational nature. Initially, enlisted men and officers expressed strong opposition to the program, but this opposition was shortlived and the program soon became quite popular. In 1938 the institute's facilities were made available not only to men of the Marine Corps, but extended to Marine Corps Reservists, naval personnel on duty with the Marines, and Marine Corps dependents. By 1926 the institute had an enrollment of over 8,100 and the curriculum had been expanded to include courses from six "schools:" academic, Civil Service, commercial, engineering, industrial and language. Texts and lessons were purchased directly from the International Correspondence School.

Marine Corps enlistments swelled in proportion to the nation's involvement in World War II and significant changes were made in the institute to accomodate the enlarged student body. High school completion courses, the utilization of the institute's own instructional staff, an expanded curriculum, accreditation of MCI courses by recognized accrediting agencies, a college studies program, and a gradual withdrawal from the International Correspondence School were the major steps taken by the institute. After the war it was difficult to retain high caliber instructional personnel within the ranks of the Marine Corps. Consequently, instructors were secured through the Civil Service commission and the U.S. Navy (Flood, 1948).

The post-war expansion of the United States Armed Forces Institute (USAFI), an instructional agency dedicated to meeting the training needs of servicemen in all branches of the military, reduced the scope of the MCI to the preparation of personnel for specific Marine Corps technical areas and courses for the advancement and promotion within the ranks of the Marine Corps (Cortale, 1954).

USAFI was originally begun in 1941 by the U.S. Army. Response was very favorable and the Army soon extended its educational opportunities to serve Navy personnel and later to the other military services. The war effort necessitated a change from military instructional personnel to civil service instruction under military auspices and in January 1950 USAFI was shifted completely to full civilian control (Schwartz, 1963).

The initial emphasis of USAFI was on high school completion either through student correspondence with the institute or one of 75 cooperating schools or universities. Later, college courses were included and accreditation agreements were developed with the American Council on Education which led to a system whereby credits could be transferred between civilian institutions and the military. Since 1945, military correspondence instruction has centered on three main concerns: 1) GED programs for high school completion, 2) specific training for military related occupations, and 3) higher education courses which have largely been delegated to non-military cooperating institutions.

Professional and trade associations have capitalized on correspondence study in two fundamental ways: 1) preparing members of the association for the responsibilities they are to perform and 2) upgrading or improving the competence of those who already occupy a position within the various trade or professional organizations.

Prior to this century at least two professional or trade associations had used correspondence materials to train members: the American Bankers Association in 1898 and the United Typothetae of America in 1887. The American Bankers Association tested alternate forms of correspondence instruction, including affiliation with the ICS, but finally opted to have classes prepared and disseminated by the American Banking Institute. The American Bankers Association continues to use correspondence as a primary means of training and informing its members.

The United Typothetae of America was a trade organization for printers. The organization used correspondence to train apprentice and journeymen in the rapidly expanding printing and graphic arts field. Apprentices could use credits earned by correspondence to satisfy the education requirements necessary to become a journeyman.

Gradually, other associations saw the values of correspondence study and adopted it as a way of reaching its members. The Insurance Institute of America, the International City Managers' Association, the American Savings and Loan Institute, the American Society of Abdominal Surgeons, the American Dietetic Association, and the American Academy of Ophthalmology and Otolaryngology are examples of organizations that have used correspondence instruction to satisfy at least a part of their instructional delivery needs.

Soon after World War I the American industrial revolution blossomed and many businesses and industries found it difficult to keep skilled workmen apprised of current technological innovations and practices. Classroom instruction and journeyman overseeing and tutoring apprentices were no longer sufficient means of instruction. Companies like the Sears Roebuck and Company, Standard Oil, Westinghouse Electric, the Equitable Life Insurance Company,

and Western Electric soon developed courses and training modules on topics ranging from common occupations like salesmanship to highly complex and technical studies as petroleum engineering.

Labor unions, like business and industry, were also pressured by the need to offer relevant and in depth instruction to its membership, especially apprentices who did not have as much background experience as journeymen. The influence of the Worker's Education Bureau of America (WEB) did much to promote and encourage education within organized labor. By 1923 the American Federation of Labor (AF of L) had designated WEB as its primary education source. The Worker's Education Bureau found correspondence instruction to be of significant value when training workers who were: 1) at various plateaus of training and experience, 2) scattered across the nation, 3) being trained in many technical areas, and 4) in need of specific and detailed instruction. Certain national and international unions, e.g. International Typographical Union and the Boilermakers Union, went as far as to mandate that members must complete certain correspondence courses relating to their trade. More frequently, the practice of using correspondence instruction has been left to the discretion of the local union board with correspondence study normally being employed when community based or union based instruction was not readily available or a sufficient number of trainees did not justify resident instruction.

Related Literature

Characteristics of Correspondence Study Students. A study conducted by Rossi and Johnstone (1965) of the National Opinion Research Center for the Correspondence Education Research Project provided a comprehensive and relatively current look at typical correspondence study students.

The general characteristics of correspondence study and correspondence study students were:

1) Students were predominantly men.

2) Students averaged 3.2 years younger than the typical "adult education" student and 9.6 years younger than the average adult in the United States.

3) The median years of schooling was identical to that for the total sample of adult education respondents (12.2 years). Participants from the lowest and highest educational brackets use the correspondence method less than those from the middle range of the educational continuum.

4) The median annual income of the correspondence student, while $470 above that of the U.S. national sample as a whole, was $720 lower than that of the average adult education student. Correspondence students have incomes considerably lower than persons involved in learning pursuits through other methods.

5) Correspondence students work at many types of occupations. There was a preponderance of craftsmen and foremen, however.

6) Large urban centers were under represented while small towns and rural areas were over represented when compared in terms of proportion of correspondence students to other forms of adult education.

7) People involved in correspondence study were much more likely to seek credit for their studies than persons studying by other methods (50% as opposed to 23%). Although few adults took courses to complete their secondary education, those who did were likely to use correspondence study.

8) Over half (52%) of all correspondence courses were in a vocational field whereas only 34 percent of the total courses studied by all methods were of a vocational nature which suggests that students place heavy reliance on correspondence study as a means of learning a vocational subject.

Rossi and Johnstone concluded from their findings that there were two significant functions of correspondence study: 1) providing a channel for occupational training for sectors of the labor force geographically isolated from institutions offering specialized training for adults and 2) providing an acceptable way for adults to complete secondary school.

Fairbanks (1968) conducted a study of correspondence enrollees in university programs in Oregon, including college and high school students, two groups explicitly excluded in the Johnstone and Rossi study. Fairbanks found, as did Johnstone and Rossi, that a substantial number of students were

enrolled to obtain degrees, diplomas, or credit. Ninety percent of the respondents said they enrolled primarily for credit and sixty percent indicated that the credit they earned by correspondence would be used for degree or diploma requirements. Forty-two percent of the college students and forty-four percent of the high school correspondence students said they enrolled in a correspondence course because the course was either not otherwise available or could not be fitted into their time schedule. This indicates that course availability and scheduling difficulties are major factors that influence students to take correspondence courses. Fairbanks also reports that while students were generally complimentary towards correspondence instruction, the majority preferred classroom instruction.

Completion Behavior. Attrition and student lethargy are persistent problem areas in correspondence study. Research in this area is fragmented and inadequate when considering the impact it has on the success or failure of this mode of instruction.

A study conducted by Fairing and Hughes (1950) at the University of Florida sought to determine the reasons for non-completion in correspondence studies. Based on a return of 248 questionnaires the following data was obtained: 120 felt they did not have enough time; 64 respondents had changed their educational or vocational plans; 64 thought the courses were unsatisfactory; 26 dropped out because the courses were too difficult; 15 quit because of general dissatisfaction and 41 ceased participation due to illness.

Hughes (1955) later investigated the problem of attrition in greater depth. Specifically, he studied the influences that (a) good study habits, (b) necessity for meeting a deadline, (c) prior college experience, and (d) prior correspondence experience had on completion rates. Good study habits were not significant but the other three variables appeared to effect completion behavior significantly.

A review of research studies that compared correspondence study completion rates nationwide was made by Mathieson (1971). His summary indicates that the average completion rate hovers around 60 percent for all students who enroll for a course and submit the first lesson and 70 percent for samples that have had non-starts and cancellees purged from the enrollment totals prior to determining completion rates.

While a 60-70 percent completion rate may appear low, no study was identified that estimated the percent of in-school students who would drop courses or programs if they were allowed to. Insurmountable scheduling difficulties, limited offerings, and predetermined graduation or completion requirements undoubtedly require many students to continue in courses that they would otherwise drop if conditions permitted them to do so.

Sloan's (1965) study of correspondence dropouts identified four prime reasons for non-completion: 1) a job required too much time and interfered with study, 2) lack of time, 3) taking course work in residence at the same time interfered with correspondence studies, and 4) lost interest - finding correspondence study boring or unstimulating.

James and Wedemeyer (1959) postulated, after examining reasons given for non-completion, that a students' motivation and eventual success in a course frequently depends upon family attitudes and study conditions.

The attitude a person has toward education frequently determines success and level of achievement. It is therefore necessary that students be fully apprised and counseled on the strengths and limitations of correspondence study before enrolling and while taking course work. A significant portion of the motivation a student receives while in a conventional course comes from personal contact with the instructor. Since this contact is highly diminished or non-existent in correspondence courses, it is imperative that

1) the student be highly motivated and self-reliant, 2) the course materials be challenging and stimulating, and 3) the student know what the goals, purpose, and requirements of the course are before enrolling.

One of the most extensive and comprehensive studies of non-completion factors was conducted by Donehower (1968). The influence of twelve select variables on 905 correspondence study students at the University of Nevada was investigated. Significant findings included the following:

1) The length of time between enrollment and the date the student submits the first lesson correlates highly with whether or not he will complete the course.

2) There is a relationship between the distance the student lives from the correspondence center and whether he completes the course.

3) The reason the student has for enrolling in a course has a relationship to his completion of the course. Individuals who enrolled to earn credits for teacher certification and/or college credit had a completion rate well above average.

4) The more education the student has the greater the probability he will complete the course. The development of good study habits, self-reliance and perseverance in past education endeavors were of unquestionable value to the correspondence student.

5) A relationship exists between the age of the student and his completion behavior. Older students complete significantly more courses than younger students.

6) A relationship exists between the sex of the student and whether he/she completes the course. The completion percentage of females was 69.9% compared to 47.32% for males. The rates of completions to withdrawals for females was over 2:1 and approximately 1:1 for males. Reasons suggested for this significance include: females tend to be better organized; females cannot afford to waste the financial investment as they are often dependent upon a husband or family for funds; females may have more time available for study since women are generally more patient and less easily discouraged than men.

The studies reported on in this section have repeatedly emphasized the need for 1) substantial motivation on the part of the student and/or integrated into the correspondence study course and 2) clearly understood correspondence study limitation/conditions prior to student enrollment.

Researchers indicate that the following improvements can be taken to increase completion rates and improve student morale and motivation: 1) place additional emphasis on counseling and guidance of correspondence students, 2) expand the use of supervised correspondence study, and 3) redesign correspondence courses to reflect contemporary learning theory and reinforcement psychology.

Student Achievement. Dubin and Taveggia (1968) studied the relationship between various forms of instruction and the achievement of college students on final examinations. Methods such as: lecture, discussion, lecture-discussion, supervised independent study and unsupervised independent study were investigated. Achievement test results were converted to standardized scores and signed differences to enable comparisons between instructional methods. It was Dubin and Taveggia's (1968) conclusion that "there is no measurable difference among truly distinctive methods of college instruction when evaluated by student performance on final examination (p. 35)." This study did not include correspondence instruction as one of the instructional strategies but the similarity existing between independent study and correspondence study would by inference suggest that correspondence study would also produce favorably comparable results.

Bittner and Mallory (1933) in summarizing research comparing the achievement and intelligence of correspondence study students with students who completed all their work in residence concluded that:

> .....when correspondence students work under the same conditions as students on the campus, they do practically the same type of quality work or a slightly superior quality. Presumably then, measured by grade points, the ability of correspondence groups is about the same as that of the residence group. But correspondence students make grades that are frequently distinctly higher than residence grades, either their own or those of others. It may be concluded that, while ability of students is about equal,

> the performance, as rated by instructors, in home study courses is superior to performance in residence courses, and that home study is favorably selective. (p. 144)

Donehower (1968) determined from her study at the University of Nevada that the time the student takes to complete a lesson or course has no relationship to the student's achievement as determined by the grade he receives. The tendency to complete lessons or courses was reportedly less when extended over a prolonged period of time, however. Donehower concurred with other researchers about the positive effects that previous educational experiences have on achievement but discounted the effects of sex or age which have been reported to be significantly related.

Cross (1936) sought to uncover relationships between student's academic success and reading ability, and general mental ability by studying a sample of high school students enrolled in supervised correspondence courses prepared by the University of Nebraska. He found 1) no correlation between intelligence and success in improvement, indicating a low ability student was just as likely to benefit as a high ability student, 2) there was a positive correlation between reading ability and final achievement. These findings would suggest that a student with above average intelligence and reading ability would have an advantage when using correspondence study materials.

Probably one of the most rigorous and authoritative research studies done on student achievement was performed by Childs in 1949. In this study regular classroom and supervised correspondence study students from five Nebraska high schools were compared using standardized achievement measures in fourteen academic and commercial subject areas. Variables such as intelligence, prior experience, mental ability, etc. were accounted for to prevent biased results. The results of the study indicated that the achievement of supervised correspondence students was definitely equal to that of regular

classroom students. When students were matched on the basis of I.Q. and age, the achievement of correspondence students exceeded that of classroom pupils by a greater margin than existed when students were matched on the basis of I.Q. and G.E.D. scores.

Lockwood (1973) in synthesizing the literature on correspondence study achievement research reports that several researchers have found that correspondence study student's achievement compares favorably with the achievement of students who study in more conventional fashions. Lockwood's review included studies by several authors (Ames, 1932; and Ziegel, 1924) who generally used grade point averages or grades received in certain courses as the benchmark for comparisons. When achievement differences did exist they tended to favor students: who were older; who had studied by correspondence study previously; and who had combined correspondence study with residence instruction.

Correspondence Study Status, Acceptance, and Accreditation

Status. The correspondence study technique has never been utilized in the United States to the extent that it has in foreign nations such as the Netherlands, Sweden, and Australia. Yet, a significant number of students have received instruction by this method. Estimates vary as to the number of students who study by correspondence. The National Opinion Research Center (NORC) conducted a survey of nationwide scope in 1962 and estimated that 2,000,000 Americans were enrolled in correspondence instruction courses (Rossi and Johnstone, 1965). The NORC study did not include unmarried students under twenty-one or military personnel, therefore, this figure is unusually low. In the same year, the National Home Study Council (NHSC) surveyed propriety schools offering correspondence instruction and estimated that there were over three and one half million students. The latest major study of correspondence study students was conducted by the Correspondence Education Research Project (CERP) in 1965. The CERP study like the NHSC study relied heavily on responses from institutional suppliers. Their survey indicated that approximately 2,935,000 students were enrolled in correspondence courses for that year. Nearly 64.2 percent or 1,884,100 of these students were enrolled in armed forces training courses including educational courses offered by the U.S. Armed Forces Institute. Private home study schools enrolled 22.4 percent and college and universities 8.2 percent of the students. Religious organizations, business and industry programs, professional associations, and labor unions accounted for the remaining 5.2 percent (MacKenzie, 1968).

An assessment of the need and demand for certain types of instruction reveals that correspondence instruction has filled a void that other modes of instruction either cannot or have not been able to fill. Nearly 3 million students, most of them 18 years or older, apparently feel correspondence

instruction had something to offer them. This figure is quite impressive when considering that there were only 5,700,000 students in higher education at the time the CERP study was conducted.

A directory prepared by the National University Extension Association indicates that students desirous of obtaining all or part of an external degree may do so at 1,277 institutions located across the fifty states. Degrees available total 2,848 of which 2,137 are associate degrees, 341 bachelors, 296 masters, 6 doctors, 55 juris doctors (law), and 13 unclassified.

Non-military Indiana residents who desire to study by correspondence can obtain instruction via three primary sources: 1) private or propriety schools, 2) college or university extension or continuing education agencies, and 3) special courses provided by employers, trade associations, labor unions, etc.

The list of course offerings available from propriety home study schools is impressive in both vocational and non-vocational subject areas. A recent NHSC publication listed some 299 different courses available from its 159 member institutions. Most of the courses were offered by many of the schools. A list of available vocational courses offered by private schools can be found in Appendix A.

Private correspondence courses are generally available to anyone who can afford to pay the tuition. However, it is not uncommon for these courses to range in price from $400 to $1800, a cost not easily afforded by most students. The inability of many students to pay the cost of correspondence instruction is undoubtedly a major factor inhibiting the use of correspondence study courses supplied by private schools.

Certain correspondence study programs, if they prepare an individual for entry into or advancement within an occupation, are classified as Veteran's

Administration approved courses, and can be taken by students who can claim benefits from the G.I. Bill, therefore reducing the financial burden on students who qualify for veteran's benefits.

Courses offered by higher education institutions are also readily available to students. Many of the larger institutions do offer vocational correspondence study programs (see Appendix B) which can be taken by either residents or non-residents of the state in which the institution is located. Courses offered at colleges and universities have a decided advantage over propriety schools in that their courses are offered as a service to enrollees rather than for profit thereby reducing the cost limitation. Course tuition charges are typically average, $20-$30/semester hour for university level courses and $25/course for high school subjects.

Since correspondence instruction relies heavily upon the postal service as a means of transmitting information and material between the student and his instructor, it is often wise for the student to select an institution which is in the state of his residence or nearby so as to facilitate a more rapid turnaround on submitted materials.

Indiana residents who take courses offered through Indiana University may also use a toll free telephone service to the correspondence study office and to the course instructor if he or she can be reached through the I.U. telephone network. This is definite advantage for students who desire to have personal contact and interaction with instructors, a normal limitation of correspondence instruction.

At present, there are few courses with a definite vocational purpose available at the universities and colleges in Indiana. A list of such courses is provided in Appendix C. The absence of vocational curricula can be attributed in part to the following reasons: 1) vocational programs of less than

baccalaureate level have traditionally been the province of: 1) secondary schools, area vocational schools, adult education programs offered through local educational agencies, and associate degree programs; 2) vocational programs typically require facilities and equipment of a unique and specialized nature not frequently found in the academic setting; 3) student interest and demand has not been as high in vocational disciplines as it has in classical studies; 4) costs associated with vocational subjects are frequently higher; and 5) the delivery of vocational subjects via correspondence presents certain peculiar problems and limitations.

Labor unions and professional associations that sponsor correspondence courses generally restrict these courses to students who are affiliated with the particular organization that pays for or provides the instruction. This instruction is normally, but not always, related to the specific occupation the individual performs. Due to the restrictive nature of this source of correspondence instruction it cannot be considered truly available to the general public and is therefore much like courses offered by the military, which are also not available to the general public.

Acceptance. Correspondence study, like vocational education, has suffered an image problem over the years and correspondence study suppliers recognize that improving their image is of crucial importance if they are to gain recognition as providing viable and pervasive instructional services. The aire of skepticism that surrounds correspondence instruction is no doubt significantly related to 1) the general public's unfamiliarity with this mode of instruction as people have been educated in conventional in-school, lecture style environments, and 2) the fraudulent practices adopted by some unscrupulous "degree mill" correspondence schools. The efforts of accrediting agencies, both public and private, and prosecutors

representing the Postal Department and the Federal Trade Commission have done much to upgrade the quality of correspondence study and reduce the number of undesirable schools. yet, correspondence study agency directors still find it difficult to secure adequate financial support, qualified development and instructional staff, and acceptance for correspondence study credit.

Several studies have been made on the attitudes of faculty members regarding the quality of correspondence study education. Dahle (1968) in his study of collegiate faculty attitudes found that there was a strong feeling that correspondence study lacked vigor and the quality of instruction was questionable. Dahle concluded that the lowest attitudes were held by those individuals who had least interaction with, or knowledge of, correspondence study. A similar faculty perception study was conducted by Morischima, Schott and Micek (1968). Their investigation involved 131 individuals representing four universities in the state of Washington. Conclusions reached included: 1) student quality was not always perceived as being comparable to that of resident students, 2) professional recognition is not equivalent to that received for classroom instruction, and 3) students were perceived as being more interested in receiving credit than self improvement.

Studies of other groups relating to the attitudes held about correspondence instruction have reported similarly low opinions. These opinions generally being related functionally to their level of involvement with correspondence instruction.

The CERP study staff conducted a survey of over 800 influential citizens from various occupations to determine their attitudes toward correspondence study. Two basic conclusions were derived: 1) the majority

of respondents were virtually ignorant about the use and value of correspondence instruction and 2) correspondence instruction ranked last after the following modes of instruction: student participation, lectures and reading, programmed instruction, and television instruction. As a part of their opinion survey, CERP also contacted practicing educators. Their unfavorable opinions largely paralleled or were lower than those expressed by the lay public. Since educators largely determine the overall acceptance of any educational method, it is evident why correspondence study has not been utilized to its fullest capability. What is particularly alarming about the negative attitude toward correspondence instruction is that it is largely based on ignorance and/or misinformation rather than empirical and substantive analysis of research and achievement (Wedemeyer and Childs, 1961).

It is of particular interest to note what educators agreed upon as suitable applications for correspondence instruction: vocational and technical education and keeping professional people up-to-date were the two areas ranked highest (MacKenzie, 1968). Most of the respondents also felt correspondence instruction was of greatest value when used in conjunction with other instructional methods. It seems curious that vocational-technical education was selected as a suitable area for correspondence instruction when considering the unique problems associated with this activity oriented and technical subject matter field. Their opinions can possibly be explained by noting that a predominant number of educators contacted by CERP served on college and university faculties, a group that has never fully accepted responsibility for providing vocational education or placed a great deal of faith in correspondence instruction. They therefore may have coupled their feelings about these "stepchildren" and considered them to be complimentary.

The poor image correspondence instruction has, despite its favorable achievement record and use by over 3 million Americans, must be recognized

and considered. Until public opinion changes, students who desire to learn via correspondence will encounter bias and discrimination when their credits and achievements are evaluated by schools and employers.

For many students the desire to attain an education and/or training is manifested in the need to meet certain educational requirements established by a school, employer, or other agency. Consequently, correspondence instruction must be of recognized value to these outside individuals or organizations as well as to the correspondence study student.

Some colleges and universities will not permit course credits earned by correspondence to be applied toward meeting graduation requirements; whereas, other institutions will allow a student to earn up to 50 percent of his credits by this method.

MacKenzie's (1968) survey of 44 higher education institutions indicated that: 22 would allow a student to earn 25 percent of his degree credit by correspondence, 2 would allow 12 percent, and 3 would allow up to 50 percent. The remaining 17 would not count correspondence courses toward graduation requirements. Most of these institutions conditioned their acceptance by stipulating that courses must be from a recognized and accredited institution. Likewise, high schools that allow credit for correspondence study routinely require that this credit be earned at an accredited agency.

Three factors largely determine the utility and value of a correspondence study program beyond their personal interest values and the services they might provide in assisting employees or prospective employees to meet occupational competency requirements for particular employers. These factors are: 1) the acceptance of credits earned by correspondence toward collegiate major and degree completion requirements, 2) acceptance of credits or units by high schools and the Department of Public Instruction toward high school

graduation requirements, and 3) the recognition and acceptance of correspondence study by the regional accreditation agency.

While some of the higher education institutions will accept at least some correspondence study credits, most schools, with the exception of the post secondary institutions, have few vocational programs to apply credit towards. A vocational program is defined as a course of studies of less than baccalaureate level that provides instruction in a specific occupational area and prepares a person for entry into or advancement within that occupation. The few vocational programs that are available in the higher education institutions are routinely organized into patterns leading to associate degrees or one year certificates, and due to their relatively short length, do not encourage the acceptance of credits from outside sources regardless of origin.

Correspondence study for college and university students can be of substantial value to students even though it may not be used for actual course credit, particularly when students wish to waive in-school participation in certain courses they have already mastered or prepare for proficiency examinations. Institutions are gradually integrating the practice of allowing students to take proficiency examinations in areas where students have had previous training or experience. Nationally recognized testing programs such as CLEP (College Level Examination Program), the Occupational Testing Program and the College Entrance Examination Board Advanced Placement Examination, as well as those developed and administered by individual institutions, will undoubtedly be utilized to a greater extent in years to come. Correspondence instruction can be of significant value to those individuals who need to refresh their memories and/or prepare initially for waiver exams of this type.

The extent to which secondary schools can utilize correspondence study instruction is determined largely by the policies adopted by local school boards so long as they do not violate the rules and regulations promulgated by the Department of Public Instruction. Presently the DPI will permit a high school to apply two units of instruction received through correspondence study toward graduation requirements. Students who desire to take correspondence courses are also required to secure the approval of their high school principal or superintendent prior to enrollment.

It is quite likely that school authorities would not encourage students to take correspondence study courses if comparable in-school classes are available. The reluctance was attributed to the following factors: 1) the school loses much of its control over the quality and quantity of instruction provided the student, 2) in-school enrollments may be lowered which could affect ADA and ADM reimbursements and the justification for some courses, and 3) money spent to finance correspondence instruction, if paid by the school corporation, benefits only one student and is often spent outside the community where local taxpayers live.

Out-of-school students who have not completed high school and desire to do so are permitted to take more correspondence study work than in-school students. The DPI authorizes school corporations to accept up to four correspondence study credits completed by out-of-school students who are over 21 years of age.

The high school dropout must overcome the embarrassment of attending classes with younger and less mature students if he opts to attend in-school classes. This embarrassment is largely negated when he earns credits by correspondence, which accounts for the large number of dropouts who use correspondence study to obtain a high school diploma.

Accreditation. It is difficult to determine the effect that accrediting agencies have on the acceptance or rejection of the correspondence study technique by secondary, post secondary, and higher education institutions but this influence is probably quite high. Accreditation, as it relates to correspondence study in Indiana, can stem from one or more of many sources: 1) the National University Extension Association (NUEA), 2) the National Home Study Council (NHSC), and 3) the North Central Accreditation Commission (NCA) as well as the regular state school accrediting bodies.

These accrediting agencies, the NUEA for college extension and continuing education programs, the NHSC for private propriety schools, the NCA for college, secondary and elementary schools, and the Indiana Private School Accreditation Commission for private and propriety schools in Indiana all strive to: 1) improve the quality of the products and services of the schools they represent, 2) certify that member institutions have met minimum standards, 3) standardize credits and establish a basis for credit transfer, and 4) provide a basis for certification and licensing standards.

High school students desiring to use correspondence study credits to meet graduation requirements from a school accredited by the North Central Association must insure that:

1) No more than four units (equivalent of 40 minutes daily, five days for at least 36 weeks) of credit are to be counted toward graduation.
2) The course(s) are approved by the high school principal or superintendent prior to enrollment.
3) The amount of work being pursued in regular high school classes plus the amount taken by correspondence does not exceed the regular load carried by full time high school students.

4) The institution offering the correspondence work is approved by the department of education of the state in which it is located (Indiana University is the only such recognized institution in Indiana).

5) The standards for graduating in his state, including the limitations in correspondence study, are met.

Accrediting agencies, such as the NCA, view correspondence study programs as a means of expanding a school's curricular offerings, and therefore are generally supportive of correspondence study programs. In fact, for many small schools who desire meritorious accreditation ratings, correspondence study is the only way they can provide the scope of curricular offering required by the accrediting agency.

The Indiana Private School Accrediting Commission has influence on only those correspondence programs that operate within the State of Indiana and do not come under the accrediting jurisdiction of the Department of Public Instruction (DPI) or the Higher Education Commission (HEC). The DPI and HEC would be involved, rather than the Private School Accrediting Commission, if a state-wide correspondence vocational education program were initiated since they concern themselves with public supported programs.

Financing a Correspondence Study Program

Background. The existence and growth of a correspondence study program, like any other education system, is largely dependent upon the availability of adequate developmental and operating funds. Fortunately, the typical expenditures associated with most education programs, buildings and grounds, utilities, supplies and equipment, transportation, etc., have been eliminated or drastically reduced with correspondence study "allowing" for proportionate increases in instructional, media, and curriculum development allotments.

The CERP survey asked various correspondence study directors to state and rank their five most serious operational problems. "Lack of funds" ranked fourth following "motivating students," "obtaining qualified graders," and "obtaining qualified teachers." However, it should be noted that the first three problems are tangentially related to finance concerns. Even with lower operating expenses many university and college correspondence study programs operate at a loss or at best on a cost recovery basis, receiving the additional monies they need from state legislatures, the Federal government, private grants, and monies from the university's general fund.

University and college correspondence study divisions also encounter an internal struggle with other instructional units within their respective institutions. The various divisions within the schools compete vigorously for available state, federal, and university funds and the stigma and non-acceptance associated with the correspondence study technique frequently limits the amount of funds made available to correspondence study divisions.

Over the past thirty years university correspondence study programs have received substantial budget and fee income increases and many now spend between $100,000 and $250,000 annually. This figure is minimal when considering the breath of offerings and size of the student body normally served (MacKenzie, 1968).

A flat rate charge per credit hour is usually assessed correspondence study students and this fee is typically the main source of income for independent study programs. Since 1964-65, these fees have gradually risen to the point where college correspondence study credit hour fees now range from $20 to $25 per hour and high school fees around $25 to $30 per unit.

Business and industries, professional associations, and labor unions often assume the cost of correspondence study for their employees or members and consider these costs to be necessary to keep employees and members current in their occupations or prepare additional and replacement workers. Their expenditures are counted as normal operating expenses and are charged to the companies' instructional budget, membership dues, and/or initiation fees. One hundred and eight companies in a CERP survey, or 43 percent of those indicating that they used correspondence instruction granted tuition refunds to employees studying by correspondence.

Unlike colleges and universities, private correspondence study schools, with few exceptions, are in the business to make a profit and must continually strive to keep postage, curriculum development expenses, instructional costs, advertising and promotion charges, overhead, and administrative costs less than revenues received from student tuition.

Many correspondence programs offered by private schools are much larger than public supported correspondence school programs, at least in terms of revenue collected. In 1965, over $79 million dollars was paid to the seven largest private correspondence study schools. This figure far exceeds the tuition and fee receipts collected by all university and college correspondence study departments combined.

The CERP survey indicated that medium sized private home study schools spend an estimated 40 to 45 percent of their total expenditures on sales and

promotion (MacKenzie, 1968) and direct instructional costs account for a mere 17 percent of their annual budget. Since public schools do not compete for students, they could conceivably offer courses of parallel quality to those available in the private sector for nearly half as much.

The state departments of education that have correspondence study divisions or assign this responsibility to other governmental agencies report varying degrees of financial support. The Massachusetts Legislature, as of 1968, had been appropriating between $275,000 and $300,000 annually for instructional salaries and program support for their correspondence study program. An additional amount of up to $400,000 derived from correspondence course sales receipts was also available for operating expenses. The amount allowed for expenditures was very conservative when considering the number of people the Division served, the scope of offerings and that 3 out of 5 enrollees were attending free. War veterans, hospital patients, prison inmates, the blind, senior citizens and servicemen stationed in Massachusetts were all entitled to correspondence instruction without charge.

North Dakota and Alaska both provide courses free of charge to residents of the state after payment of a nominal registration fee. These states fund their programs with appropriations made to the Department of Education by the states' legislatures. The assessment of fees is frequently determined by the student's state of residence, much the same way as regular college course fees are determined. This same method is used to assess fees for college and university correspondence courses especially if they are state supported institutions.

The Cost of a Correspondence Study Program. It is extremely difficult to isolate and determine the relative cost of certain types of educational and

instructional programs, especially when hidden or indirect costs such as utilities, depreciation, interest, insurance, etc. are included. Advances now being made in the fields of cost/benefit and cost/effectiveness analysis will hopefully shed light on this topic in the future. Presently, however, about all that can be done is to present gross comparative estimates between correspondence study instruction and more conventional techniques. Truly valid comparisons would also account for factors such as student achievement and satisfaction measures, completion rates, learning acquisition time, retention, etc., which cannot be equated using non-clinical ex post facto study procedures.

The costs associated with correspondence instruction provided by a state or local education agency can roughly be categorized into two areas: 1) developmental and 2) administrative. Developmental costs would be concerned with the author's reimbursement, copy preparation, securing resource materials, editing, etc. Developmental costs are generally fixed costs and will normally vary in proportion to the complexity and length of the course being developed. Administrative costs are those expenses that relate to the delivery of the course to students, e.g., postage, printing, clerical staff, course revision, and instructional expenses as well as operational expenses and overhead. Administrative expenses are functionally related to the number of students enrolled plus overhead. As a general rule, administrative costs fall along a curvilinear path which resembles the "bell" curve with administrative cost efficiency being greatest when there are very few students or a great many. When few students are enrolled, the clerical chores involved in record keeping, coordination, etc., can be facilitated by the instructor or grader. When enrollment increases to the point where clerical assistance is needed it

is more economical to centralize and systemize this clerical assistance and provide it for all correspondence instructors. Generally, this system cannot be formed unless there are a substantial number of students.

Developmental costs for a one semester high school or three semester hour collegiate course would normally not exceed $3000 with administrative costs being $25-100/student depending on the number of students involved and the type of course. Empirical evidence could not be found to support the above figures, however, they appear to be close approximations based upon an analysis of costs associated with course development for this study.

The 1971 ANACOMP evaluation study conducted for the Indiana State Advisory Council for Vocational and Technical Education determined that Indiana's expenditures per pupil for vocational technical training were $200 per student per year. This figure depicted supplemental expenditures from vocational education funds and did not include general support monies which contributed about $750/student annually during that period. Vocational education courses normally constitute one-third to one-half of a student's program of studies, depending on the type of vocational instruction he is receiving and the comprehensiveness of his schedule. It can be determined, by taking the costs of instruction (vocational education monies made available to school systems plus general state tuition support) and multiplying it by the amount of vocational instruction received (average number of hours of vocational instruction received per day), that taxpayers paid nearly $500 per pupil to train vocational students during the 1970-71 school year period. Added to this cost, is the amount students also contributed to their education in the form of transportation, books, instructional supply monies, etc. which, according to administrators responding to the ANACOMP (1971) survey, amounted to approximately $200.

Equivalent instruction (equal number of course credit hours) received by correspondence instruction would cost roughly $200 per year. This figure is based on what public colleges, universities and state departments typically charge, not necessarily the true costs (which are unknown but would probably be considerably higher). If true or actual correspondence study costs were twice as much as what is charged, they would still cost less than in-school instruction.

It will be pointed out later in this report that representatives from public supported correspondence study agencies (colleges and universities) in Indiana estimate that correspondence study is somewhere between 20 percent and 80 percent less expensive than equivalent in-residence instruction.

There are some obvious reasons why correspondence instruction should be more economical:

1) Payment for instruction duties performed by the grader or mentor are normally based on the number of lessons submitted. When a student ceases submitting lessons, the instructor's compensation ceases. In-school programs must pay the same basic instructional cost regardless of enrollment. Instructional costs regularly amount to over 70 percent of a conventional school's budget and savings in this area can be very influential.
2) Curriculum development expenses that are incurred are divided among students statewide and possibly nationwide rather than having each school develop materials and curricula for their respective students.

The information given in Table 1 provides an accurate profile of expenditures for a correspondence study program. Unfortunately data were not collected from state departments of education that provide correspondence study but the information collected from colleges and universities is probably somewhat parallel as neither are profit-making agencies and do not conduct large scale promotion and advertising campaigns but operate as a public service. It is significant to note that the major expense category for colleges and universities is in the area of course development, revision, and application, an area that receives too little financial consideration in most residential schools.

The ANACOMP evaluation survey (1971) indicated that program instructors and/or administrators, in general, were up-dating their curriculum, however, frequent criticisms of the program as being out-dated were made by employers and program graduates. This problem could be resolved easier by correspondence study suppliers than by in-school program since necessary revision efforts and financial support could be focused on one universal, statewide, course rather than on several courses of the same type provided by the individual schools.

A large share of correspondence study curriculum development money goes for course writing and editing. The amount varying extensively between agencies and depending upon factors such as the 1) length of the course, 2) the complexity or technical expertise required of the author, and 3) the expected enrollment. Historically, payment for course development has been either non-existent or extremely low and course writers have generally been expected to recoup their developmental salaries from instructional fees collected from students who desire to take the course. This pattern has gradually diminished and authors are now being given honorariums for their

Table 1

Percentage Distribution of Budget Expenditure*

Items of Expenditure	College and University			Private Home Study Schools		
	Medium Sized Programs		Large Programs	Medium Sized Schools		Nonprofit Schools
	Range, %	Mean, %	Range, %	Range, %	Mean, %	Range, %
Operating Cost (Total)	32.5-42.8	39.5	35.1-51.0	29.1-38.8	33.7	41.1-na[1]
Administrative & Clerical (including wages)	21.0-27.0	26.1	21.6-32.0	nbd[2]	----	17.3-na
Facilities (plant, office supplies, non-promotional mail)	11.5-15.8	13.4	13.5-19.0	nbd	----	23.8-na
Instructional cost (Total)	49.9-66.0	56.9	43.0-52.2	17.1-28.3	22.8	36.0-51.8
Course Services (preparing, correcting, grading, testing)	46.9-62.0	53.6	40.0-48.0	12.0-22.8	17.4	nbd
Course development and revision	3.0-4.0	3.3	3.0-4.2	5.1-6.0	5.4	nbd
Promotional cost (Total)	1.0-5.1	3.4	3.5-4.2	30.6-58.9	43.5	7.1-50.0
Advertising and Promotion (including promotional mail)	1.0-5.1	3.4	3.5-4.2	15.6-30.0	21.2	nbd
Sales representatives (salaries and expenses)	0	0	0	15.0-28.9	22.3	nbd

*CERP survey information taken from a selective survey of universities, private home study schools and USAFI. Survey samples are limited and indicate general patterns, not statistically accurate or exhaustive results.

[1]na=not available

[2]nbd=not broken down

developmental efforts. These payments still do not compensate developers adequately as they rarely exceed $1500 for a three semester hour course. Remuneration for lesson grading and instruction is also pitifully low, often not exceeding $2.50 per lesson. While some lessons can be graded for informative instruction provided in a few minutes, others require diligent and indepth analysis and response which far exceeds the financial consideration provided.

Few correspondence study writers or teachers in public supported institutions rely solely on correspondence study for a livelihood. Therefore, their involvement with correspondence instruction is considered supplemental employment or a form of "moon lighting" which generally pays less than regular or full time employment. This practice is not necessarily poor as it provides a means of securing adequate instructional assistance at a relatively low cost. If a particular course is utilized extensively, a full time writer should by all means be retained. However, this practice is the exception rather than the rule in most public supported correspondence study programs.

A potential and promising source of correspondence study writers could be drawn from the ranks of practicing teachers who desire employment during summer vacation periods. Such individuals should be current in educational practice and subject matter specialization and with a minimum amount of training could adapt their in-school materials for use in correspondence instruction. Both the developing agency and the writer would benefit financially--the agency by having materials developed at a conservative cost and the author by receiving supplemental professional level employment.

Ways and Means of Financing Correspondence Instruction. A procedure has been adopted which will permit school corporations to assume the costs of correspondence instruction for their students. These costs would be charged to the school corporation's 261 or 269 account (State Board of Accounts expense categories for instruction). This procedure would be allowed only in cases where equivalent instruction is not available or provided for by the school corporation.

A question then arises concerning the use of vocational funds for correspondence study instruction. An interpretation of Public Law 90-576 (Vocational Amendments of 1968) would appear to suggest that states can use vocational funds for payment of private school tuition costs, which could conceivably be correspondence study suppliers. The following excerpt from P.L. 90-576 clarifys this point somewhat, "agreements can be made for vocational training through arrangements with private vocational training institutions where such private institutions can make a significant contribution to attaining the objectives of the State plan, can provide substantially equivalent training at a lesser cost, or can provide equipment or services not available in public institutions." Certain qualifications or conditions exist however:

> "The term 'private vocational school' means a business or trade school, or technical institution or other technical or vocational school, in any State, which (A) admits as regular students only persons who have completed or left elementary or secondary school and who have the ability to benefit from the training offered by such institutions; (B) is legally authorized to provide, and provides within that State, a program of post secondary vocational or technical education designed to fit individuals for useful employment in recognized occupations; (C) has been in existence for two years or has been specially accredited by the Commissioner as an institution meeting the other requirements of this subsection; and (D) is accredited (i) by a nationally recognized accrediting agency or association listed by the Commissioner pursuant to this clause, or (ii) if the Commissioner determines that there

is no nationally recognized accrediting agency or association qualified to accredit schools of a particular category, by a State agency listed by the Commissioner pursuant to this clause, or (iii) if the Commissioner determines that there is no nationally recognized or state agency or association qualified to accredit schools or a particular category by an advisory committee appointed by him and composed of persons specially qualified to evaluate training provided by schools of that category, which committee shall prescribe the standards of content, scope, and quality which must be met by those schools and shall also determine whether particular schools meet those standards. For the purpose of these subsections, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations and state agencies which he determines to be reliable authority as to the quality of education or training afforded.

CONSIDERATIONS FOR DEVELOPING AND OFFERING A COURSE FOR CORRESPONDENCE STUDY

Background

Correspondence Education Research Project, (CERP), recognized five stages relating to the development and provision of a correspondence study course: 1) planning, 2) preparing and presenting the course, 3) providing student-instructor interaction, 4) reinforcing and validating learning, and 5) revising the curriculum.

In planning to offer any type of course it is imperative that the planner recognize the strengths and weaknesses of various delivery systems. Correspondence instruction can serve admirably for some courses and miserably for others. Courses may also be subdivided with certain modules being presented by correspondence and others by more conventional techniques. Unfortunately, hard and fast rules do not exist to guide the planner in his determination of which delivery technique to employ. Trial and error, research and experimentation remain the most formidable methods of determining if courses can be offered by correspondence.

Factors, in addition to subject analysis, which must be accounted for by planner are: 1) specifying objectives, 2) specifying the recipient audience, 3) determining course content, and 4) establishing criteria for successful completion. Once these elements are specified, course development can proceed into the preparation and presentation stage.

Course writers must by necessity be experts in the field in which they will be writing and have an awareness of the peculiar nature of correspondence instruction. The writer must be able to structure instruction in a clear, precise manner and foresee and account for the student's questions and problems when writing the course.

The correspondence or independent study writer must also realize that instruction is primarily transmitted to the student through the mail. Therefore, a voluminous amount of material is not practical and student feedback must be restricted to information that may be graded rapidly and a high degree of clarity. The military, a processor of thousands of correspondence study students, has adopted a system whereby grading and evaluating student work is done by computer. This system's greatest merit lies in the rapid turnaround on lessons submitted. Their computerized system also serves a programmed learning device in that it informs students about areas in which they are weak and tells them what should be done for remedial instruction. The computer cannot, however, provide the instructor/student interaction that many students feel is needed.

There are two predominant ways of providing content information: 1) have the course writer provide the content information as a part of the total correspondence study package and 2) use textbooks or supplemental materials as the basis of content information with the course author structuring the learning sequence, adding omitted information, and providing study aids. Private correspondence study schools, the military, and most business and industrial based courses generally use the former technique, incorporating the entire course into a single package. Colleges and universities, on the other hand, tend to use related reference materials unless there are none available or suitable for the course in which case the content materials are also developed. There are advantager and disadvantages associated with each approach. Commercially prepared textbooks, visual aids, and reference documents are generally better prepared both editorially and visually, are readily available, and cost less unless there are hundreds or thousands of students.

Occasionally it will be impossible to find suitable commercially prepared reference material, especially in specialized or high technical subject areas. In such instances the only solution is to prepare original materials. Original material also allows the author to present information in segments or modules, a small dose at a time--a significant plus when using correspondence instruction. It is very difficult to say one method is superior to another as many variables must be accounted for: 1) the type of course, 2) the writing ability of the author, 3) the amount of development money available, and 4) the extent and quality of existing materials.

Regardless of the content presentation format, most correspondence study course lessons contain the following information: 1) lesson objectives, 2) reading or study assignments, 3) discussion of content and application of reading/study assignment to the overall theme of the lesson, 4) self study assignment, and 5) proficiency or evidence of mastery assignment. After completion of a certain prespecified number of assignments a supervised quarterly, mid-term or final examination is usually given. The trend in evaluating achievement is now towards criterion referenced evaluations rather than the more traditional norm referenced examinations. This would appear to be a positive move since students are being evaluated in terms of their mastery of subject matter rather than competition with other students.

Providing for student-teacher interaction is of crucial importance and cannot be overlooked or neglected. Several follow-up studies have indicated that students perceive the lack of association with the instructor and other students to be of major importance. Recent advances in uses of audio cassettes, toll free telephone communications, and instructional television have done much to reduce the students' isolation, yet the instructor must continuously strive to maintain a close working relationship with his students. This

interaction must be present when: 1) evaluating or grading student work and 2) guiding the student's remedial instruction and acquisition of new knowledge. Communication and concern has been shown to be of paramount importance to student motivation.

Tests and examinations not only provide an indication of the student's master of subject matter but also provide a measure of the course's validity and effectiveness and should be analyzed in detail to reveal course areas in need of improvement. Course examinations should be directly related to the stated objectives of the course. Accrediting and certifying agencies also rely on examinations to insure that a student has at least basic knowledge and comprehension of a subject.

Curriculum revision refers to the process of expansion, retraction, and modification of existing courses to keep them current with consumer demands. As technology and the scope of man's knowledge expands it is necessary to modify educational curricula to keep pace with the times. The decision to revise or modify a course can come from an analysis of student attitudes and achievement. The students' ability to apply or utilize what he has learned should also be checked. A course should also be evaluated to determine if it, in fact, prepares the student with needed contemporary skills.

Several methods have been used to determine the need for new courses: 1) requests made by the user public, 2) market analysis or needs assessment, and 3) analysis of new and emerging areas in need of instruction. The most sound approach, but the most costly, appears to be needs assessment. Unfortunately, none of these methods go beyond making reasonable estimates of needed courses.

Advantages and Disadvantages of Correspondence Study

Correspondence instruction like any other instructional medium has its own peculiar strengths and weaknesses. Before intelligent decisions can be

made about the use of correspondence instruction, it is imperative that these associated factors be identified and analyzed in relation to the intended application.

Advantages.

1) Correspondence instruction can reach students who cannot attend residential schools because of: incarceration, geographic inaccessibility, family responsibilities, time availability, etc.

2) Instruction is highly individualized. The teacher and student work in a one to one relationship with the instructor placing emphasis on each individual student's mastery of the subject rather than group mastery.

3) Instruction is flexible. The student can progress at a rate that adapts to his learning ability and study time availability.

4) The correspondence study program can serve any number of pupils unlike conventional in-school programs which require minimum and maximum class sizes.

5) Students can begin instruction at any time and need not wait for quarter or semester enrollment periods.

6) Students learn to be responsible for their own education which builds self-reliance and desirable study and learning acquisition skills.

7) Program or course costs are generally lower than comparable in school classes.

8) The length of the course is related to the student's achievement and mastery rather than school quarters or semesters.

9) Students who are not genuinely interested in a program or course can withdraw at any time and generally are not bound by class enrollment mandates or fear of embarassment.

Disadvantages.

1) Heavy reliance is placed on the student's ability to read and comprehend material sent to him and to respond by writing legible and intelligible responses--skills all too many students fail to possess.

2) Students must have above average motivation, desire to learn, and ability to acquire knowledge in a remote setting.

3) The opportunity for personal interaction with the instructor is negligible and with other students virtually non-existent unless a supervised, group correspondence study approach is

used. Students cannot benefit from discussion with other students who are studying similar topics.

4) Students cannot engage in laboratory or shop activities unless a) necessary materials can be shipped to the student, b) the student can attend periodic seminars or workshops, or 3) the student has the required equipment or materials at his disposal at his home or work.

5) Some courses, due to the nature of their content, cannot be taught effectively by correspondence. This is especially true of highly technical courses, courses requiring discussion and interaction and classes requiring extensive involvement with sophisticated materials and equipment.

6) Answers to student questions are not answered immediately, which, discourages students and disrupts the optimal teaching-learning process.

7) Examinations that accompany lessons and at the end of the course are frequently restricted to the paper-pencil type which often are not suitable for courses which teach creative expression, manual skills, deductive/inductive reasoning, etc.

8) While the pace of instruction is flexible allowing for individualization, the course requirements and student expectations are normally rigid. Truly individualized instruction would provide alternative strategies of instruction. In correspondence study these alternatives are not provided unless remedial instruction is needed, and not always then.

9) The person responsible for grading lessons and instructing the student may not have prepared the course syllabus and may not be sympathetic to it.

10) Many correspondence instructors are unfamiliar with proper correspondence study instructional processes and cannot use the correspondence study technique to its fullest potential.

11) Curriculum revision often necessitates rewriting, reprinting, and/or recompiling the study guide or syllabus. While it is an advantage to reconstruct one curriculum rather than the many that would be possessed and used by individual schools around the state, it would necessitate a considerable amount of financial and manpower commitment and should be done annually for each course.

Uses of Correspondence Study

There have been drastic changes in the rationales underlying the use of correspondence study materials over the last two decades. The middle and late

1950's was a period of rapid technological, educational, and social growth in America and it was difficult for most schools to secure adequately trained teachers and incorporate up-to-date curricula. Consequently, correspondence study was a means employed to keep students current with contemporary thought and knowledge in many fields. As greater emphasis was placed on teaching, an over supply of well prepared instructional personnel developed in most teaching fields in the late 1960's and early 1970's. Now the problems of inadequate financial support and declining student enrollment have risen to replace teacher shortages and outdated curriculum as justifications for the continued use of correspondence study in secondary schools. Secondary schools have found it increasingly more difficult to be accountable for a class of less than 20 even though the class may be considered to be of inordinate importance to those students who would like to be enrolled in it. Additionally, the secondary school curriculum is no longer restricted to classical studies such as math, science, English, and physical education. Students have desired instruction in areas such as Chinese literature, photography, sex education, computer programming, art appreciation, Negro history, and a multitude of other subjects that transcends the available instructional resources and curriculum related materials in most high schools.

Application of Correspondence Study to Various Vocational Education Learning Environments

Correspondence instruction can be used to supplement other forms of instruction as well as serve as a complete education delivery system. The following examples present some alternative uses and applications of correspondence instruction in vocational education which are apart from total vocational correspondence instruction offered in the remote setting or supervised in-school.

1. Supplement traditional in-school vocational instruction.
2. Supplement cooperative (work-study) education programs.
3. In combination with intensive or vestibule training programs.
4. Provide instruction in related vocational subjects.

Correspondence instruction can be used effectively to enhance or supplement traditional in-school instruction. Students having difficulty grasping the content of teacher presented material can use correspondence study as an additional or tutorial means of securing instruction. Some students are reluctant to ask resident based teachers for assistance because they fear humiliation, peer pressure or other extraneous influences and therefore do not receive adequate instruction for their needs. The use of correspondence study in this form provides the student with various options for learning--a very sound approach in view of the current trend to multi-media and multi-faceted approaches to teaching.

The emphasis placed on cooperative or work experience education since the passage of the Vocational Education Amendment of 1968 has expanded the use and acceptance of this type of instruction. Frequently, it is found that a coordinator cannot address the educational needs of each student he must supervise, especially when the occupations being learned represent many occupational areas or when the kinds of occupations being taught are highly technical and exceed the expertise of the coordinator. In such circumstances, the coordinator could rely on individualized occupational instruction which could be given to each student by correspondence. In this manner the technical content could be provided by an instructor who is qualified; the student would be challenged and instructed in his particular area making instruction more

relevant and challenging; many occupational areas could be served; and the teacher-coordinator would be free to devote the majority of his time to general related instruction and individual student advisement, counseling, and supervision.

Some students do not receive vocational instruction because they cannot find the necessary time to attend classes during the normal instructional period. This is exemplified in students who have time scheduling problems, full schedules, or personal and situational encumberances. For these students the vestibule or intensive training session may be most appropriate. In these cases preparatory instruction could be provided for the student in his home and in advance of actual school attendance by using correspondence study materials. This could substantially reduce the amount of time the student would need to be in residence. Resident instruction would be devoted to the application of knowledge and would be required for only those portions of instruction that could not be effectively transmitted and taught through correspondence, e.g., manipulative activities using resident based equipment.

The need to expand the scope of the regular vocational curriculum by offering instruction in related vocational subject matter has long been recognized. Instruction in subjects like shop math, related science, blueprint reading, etc., often demand a significant amount of time in most vocational courses. This type of related instruction could well be provided by correspondence and free the time now being devoted to such activities for more in-depth vocational course coverage and involvement.

Vocational courses are not significantly different from other courses taught in the public schools with two exceptions: 1) they have an occupational preparation purpose and 2) they frequently require the use of

rather complicated and expensive physical apparatus and facilities. The first of these two concerns can be met in the design and presentation of the curriculum, the second presents a more complicated problem. Unless the student owns or has access to the necessary equipment or facilities necessary for instruction it will be impossible for him to gain what he should from the course. In these situations there are three alternatives: 1) allow the student to use the tools and equipment he has at his disposal at home or work; e.g., typewriter, dictaphone, adding machine, sewing machine, etc., 2) mail or transmit portable items to the student for home use, or 3) allow the student to do what he can at home then have him attend resident instruction where he can use the items he could not secure in his home. This area of concern should not be minimized as it probably represents the single most important restriction for vocational correspondence instruction and largely determines the courses that can be taught.

Organization of a Statewide Vocational Correspondence Study Program

At present, correspondence study programs offered through public education agencies in the state of Indiana operate as fragmented and isolated entities--attempting to serve the educational needs of their respective students. Few attempts have been made to offer courses in the vocational education domain. Consequently, a systematic or organized program of vocational correspondence study is virtually non-existent in this state.

Several methods could conceivably be used to provide vocational correspondence instruction if the state desired to implement such a program:

1. Allow the various education agencies, both high school and post high school to operate their own correspondence study programs.

2. Have the state department of public instruction, through the Division of Vocational Education, operate a vocational correspondence study program.

3. Permit only a few educational agencies to be responsible for correspondence instruction in the state.

Based on existing conditions and present operating procedures within the state, the option to affiliate with only one or a select few agencies seems most reasonable for future education correspondence development and instruction. Additionally, it is not suggested that the DPI be the agency designated to offer vocational education correspondence study programs. The basis of these recommendations is based on the following factors:

1) Historically, the Indiana DPI has not been engaged in providing instructional services. Their mission has been restricted to legislative and supervisory concerns and it is doubtful that the DPI would sanction a move into the instructional services field.

2) When several agencies are allowed to provide parallel services these services tend to be isolated and fragmented. It is also likely that few schools would have an interest in or need and financial capability for such a program. Some exceptions do exist for collegiate extended services divisions, however.

3) One agency is better capable of meeting the vocational needs of the state since it can concentrate on meeting these needs and need not compete with other schools for students and funds. The demand for correspondence vocational instruction is not likely to be large, regardless of the area taught, if instruction is provided through several schools. Additionally, duplication of effort tends to be costly and inefficient unless specifically required.

Vocational Courses Suitable for Correspondence Instruction in Indiana

The process of deciding which vocational course(s) should be taught by correspondence, if any, is nebulous and at best an unscientific judgement. However, at least five factors should be considered when this decision is made: 1) the need for vocational training in the various

occupational areas; 2) the public's demand for specific occupational courses; 3) the capabilities of existing vocational training facilities and programs in the state to meet the needs of business, industry, and the economy; 4) the demands of students who desire to have vocational instruction; and 5) the ability of correspondence instruction to satisfy the instructional requirements inherent in the course(s) being taught.

Long and short range planning focused on identifying appropriate courses and preparing for the state's occupational training needs is based, at this time, upon a rather unsophisticated approach which relies predominantly on occupational needs reports prepared annually by the State Employment Security Division (ESD) and presented to the Indiana State Vocational Education Advisory Council and the Division of Vocational Education in the Department of Public Instruction. These statewide reports are supplemented, on a local level, by feasibility studies. Unfortunately, formal feasibility studies are normally performed only when a school or school corporation begins a vocational program and feasibility studies are seldom conducted after the total program is in operation; therefore, they do not account for changing, declining, or emerging occupations in the community. This is not to say that LEA programs do not keep pace with the employment preparation needs of their community. These needs are, however, identified by means other than formal feasibility studies or employment needs investigations. The Indiana Employment Security Division in its Interim Manpower Projections for the period 1970-80 indicates that Indiana's population is expected to increase approximately nine percent from 5,194,000 to 5,665,000. The increases are expected in the age groups 20-24 (38%) and 25-34 (47%)--age categories that will be in need of wage earning employment. Since the total employed labor force is expected to increase thirteen percent to 2,495,000

or 207,000 more than the 2,288,000 available employment positions, it is evident that employers will be placing heavy emphasis on applicants' background, training, and education as they seek to fill their vacancies. Consequently, demands will be placed on the state's occupational and general education system to provide the type and kind of instruction that will make individuals more competitive as they seek to secure available jobs. People not securing employment within their employment region will be forced to seek employment in other regions or other states, remain out of the labor force and not seek employment, or be unemployed. Correspondence instruction could conceivably be utilized to meet the occupational preparation needs of those people.

The 1974-75 two-year occupational needs forecast prepared by the ESD indicates that there are a number of occupational areas in which supply does not meet demand. These occupational areas were determined by surveying the regional ESD directors in the state's 14 employment districts which encompasses 27 metropolitan areas. Regional directors were asked to rate 105 occupational areas which normally require vocational instruction. From this report ninety-six occupational areas were identified in which available manpower was not sufficient to meet the needs of the local business and industrial economy. A list of these occupational areas is given in Appendix D. These occupational areas, as perceived by the regional directors, are ones in which there are manpower deficits. Consequently, efforts should be undertaken in the state to provide adequate training opportunities to prepare individuals for these positions, possibly through correspondence study since many of the occupations could well be taught by this technique.

There was reportably a high need for private household workers, insurance salesmen, and waiters and waitresses. These occupations represent areas in which instruction is generally not provided in publicly supported secondary or post secondary vocational education programs mainly because the curriculum doesn't fit the traditional one or two year minimum length requirements and the need is not heavy enough in most geographic areas to justify program development. Correspondence instruction could be an alternative, thereby eliminating the need for facilities, supplies, and equipment while serving those students who need such instruction. Courses could be started and ended at any time, a certain minimum enrollment would not be needed, and employers and employees could benefit from improved efficiency through vocational education.

Looking at vocational training needs through the eyes of the ESD is only one of many means of assessing the training efforts we should be expending in this state. The perceptions of business and industry, labor and professional associations, and, most of all, students should also be weighed and considered.

Whenever training programs are planned and designed it is imperative that program planners consider whether or not students are interested in pursuing the occupation to the extent that a vocational program can be supported and whether students can adapt and fully utilize the method employed to deliver the subject matter. This later concern is especially important when considering the use of correspondence study material. Most people have never used correspondence study and many would have some difficulty adapting readily to this method of instruction.

Employer needs and student demand are not always in harmony. Because there are demands for certain types of workers is not an assurance that there

will be a desire on the part of employees to assume that occupational role and because students want instruction in certain fields does not always mean they can find employment once they have been trained. If a correspondence study program were to be initiated in vocational education, a preliminary forecast should be made to account for and balance the forces of training needs and student (prospective employee) demands.

As originally conceived, this study sought to identify course areas where correspondence study could and/or should be used. At this point it seems more appropriate to redefine this objective to focus on establishing a framework for determing if a course is suitable for correspondence instruction in light of the inadequate occupational needs/demands data base that presently exists. For theoretical discussion purposes it can be assumed that virtually all vocational courses could be taught, in whole or part, by correspondence. It is then a decision-making process upon the part of state and local vocational education officials to determine which instructional methods are most appropriate. The accompanying flow chart, (illustrated by Figure 1), may be of value in conceptualizing this decision-making process.

Needs assessment, as previously pointed out, is not easy to determine from the existing data based on present forecasting techniques. The program developer must, by necessity, rely on such unsophisticated techniques as analyzing employer and trade union requests for training programs; duplicating programs and services offered in other regions of the state or nation; and analysis of reports prepared by community services agencies, Chambers of Commerce, employment security agencies, census takers, and trade associations.

After preliminary needs assessment data is secured, the next step involves determining the adequacy of existing vocational programs in meeting

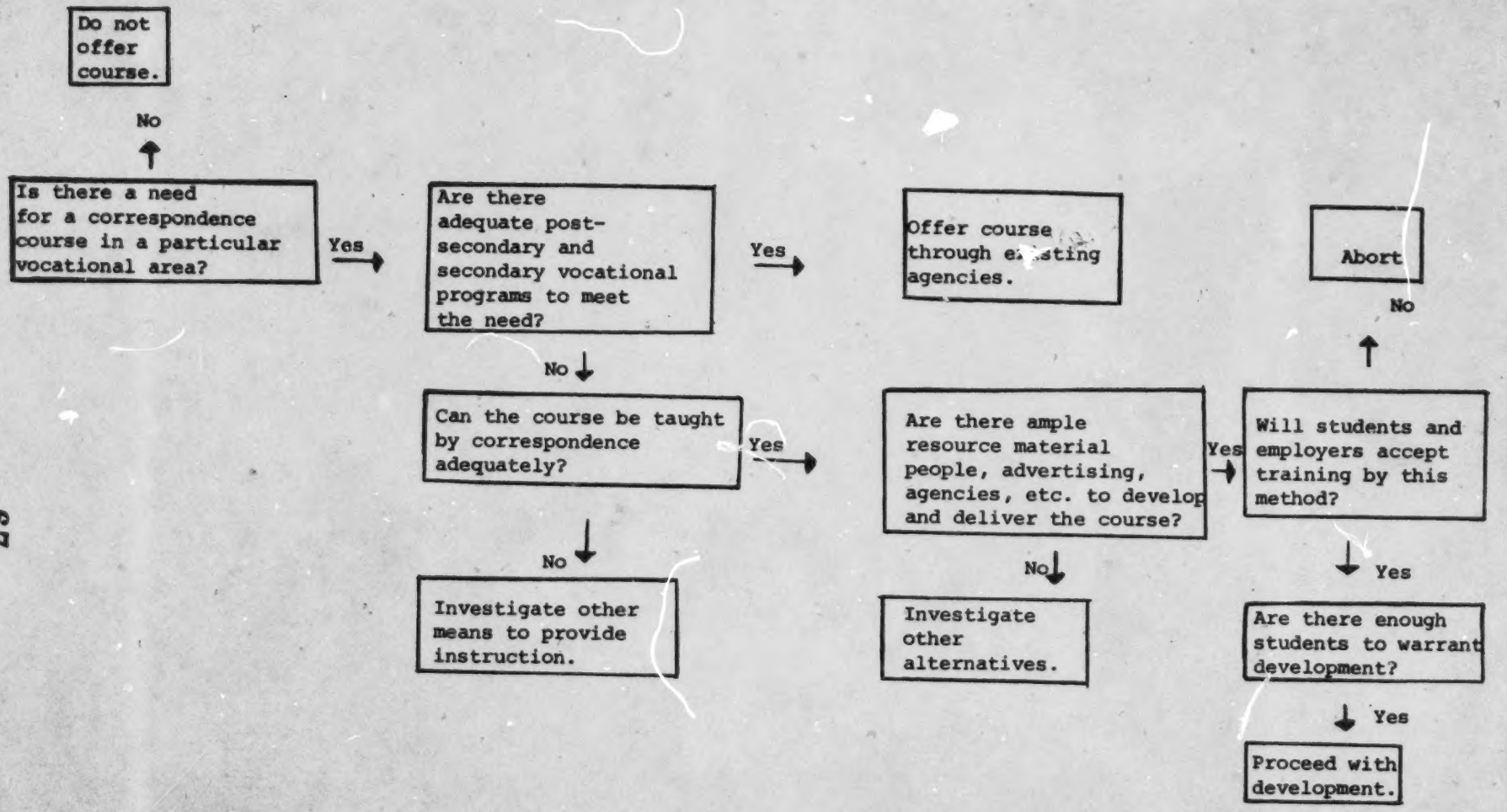
Do not offer course.
No
Is there a need for a correspondence course in a particular vocational area?
Yes
Are there adequate post-secondary and secondary vocational programs to meet the need?
Yes
Offer course through existing agencies.
Abort
No
No
Can the course be taught by correspondence adequately?
Yes
Are there ample resource material people, advertising, agencies, etc. to develop and deliver the course?
Yes
Will students and employers accept training by this method?
No
Investigate other means to provide instruction.
No
Investigate other alternatives.
Yes
Are there enough students to warrant development?
Yes
Proceed with development.

Figure 1 -- Decision Making Model for Determining Whether to Use Correspondence Study

the occupational preparation needs of students. This can be and is another monumental obstacle. Undoubtedly, the expansion of the state's area vocational school concept which now includes some 32 LEA programs has been of significant value in diminishing this concern. An additional twelve areas are presently considering area vocational schools and when the concept is fully implemented the entire state will be served some 48 area vocational school programs virtually insuring a secondary level vocational program within 40 miles of any Indiana resident.

Secondary level vocational programs are complemented by six publicly supported institutions of higher education with 31 campuses, centers and technical institutes across the state as well as 10 post secondary programs offered at area vocational schools. In addition, 30 independent institutions offer vocational training in Indiana.

Therefore, if progress on area school development continues as is predicted, the concern for adequacy of training facilities cannot be considered to be significant.

It must be realized, however, that the existence of area vocational schools or post secondary campuses does not guarantee that: 1) vacancies exist for students who desire instruction, 2) schools that are supposed to send students to area vocational schools actually do, 3) the type of occupational training students desire is offered at the school in their region, and 4) students have the available time and money necessary for participation at schools in their locale. In these situations correspondence study could be desirable as a substitute or alternative vocational education instructional delivery system.

Earlier in this section it was implied that all vocational courses could be partially or totally offered in some manner by correspondence.

While this is theoretically true, there are some practical considerations which must be considered and reckoned with. Previously it was inferred that occupations like insurance sales, waiters and waitresses, and domestic workers could be effectively taught by correspondence. This is because the instructional content underlying the causes could be transmitted effectively in written form with little "hands-on" involvement required on the part of the student. If "hands-on" experience was required for these courses, the student could probably find the necessary materials and facilities in the home or at a nearby commercial establishment. Now let's contrast these occupations with other high need occupations such as machinist, tool and die maker, professional nurse, electrical technician, body and fender repairmen, etc. For these occupations the only conceivable ways the courses can be given sufficient coverage would be to 1) have the student use his own or a cooperating employer's tools, facilities, equipment and supplies, 2) have the student receive part of his instruction in home and part at school, or 3) provide the student with the tools and equipment he needs for home usage.

The first of these alternatives seems most appropriate in a formal cooperative education environment rather than a program structured and initiated exclusively by the student. Employers who desire to do their own in-house training might also find this approach of value. The second option poses the most serious organizational and administrative problems. This might be used in special situations like the experimental alternative school concept presently being investigated by the Metropolitan School District of Warren Township. The last alternative is feasible when the kind and amount of materials to be loaned or sold to the students are within reason. A vocational course in drafting exemplifies this approach. Students could secure the

instruments and materials necessary for the course on a loan basis or purchase them for less than $150.00 which would enable them to work at home.

The basic issue can be reduced to the issue of whether the curriculum can be reduced to written and/or portable audio-visual media and whether necessary "hands-on" experience can be accounted for and facilitated in a remote environment. If these concerns can be satisfied, it is reasonable to expect that most courses could be taught by correspondence.

Unfortunately, the literature makes little if any reference to student achievement and problems associated with vocational education correspondence instruction. However, it is the authors belief based on past experience and familiarity with the literature that correspondence instruction should not be provided in areas that: 1) are highly technical, 2) are based on lecture, discussion, and/or dialogue between members of the class or between the student and teacher, 3) normally require over one year's length in traditional in-school programs, 4) cannot be effectively subdivided into modules or units of instruction, 5) rely heavily on manipulative activities, and 6) require constant and intensive teacher supervision and tutoring.

It would appear then that the real potential for vocational correspondence instruction would be in areas like blueprint reading, related math, salesmanship, bookkeeping, child care, secretarial and clerical training, distributive education. Correspondence instruction could also be offered in subjects like: painting and decorating, typing, small engine repair, building maintenance, drafting, food service, and cosmetology if adequate provisions were at the student's disposal.

Training for occupations like machinist, appliance repair, building construction, heavy equipment operation, computer operation, fire protection,

etc., are not well suited to correspondence due to the emphasis on hands-on experiences with large, expensive, and/or complicated equipment. The theory portion of these courses could conceivably be taught by correspondence, however. For example, it would be possible to teach topics such as highway safety, log record keeping, traffic rules and regulations, etc., in a course for professional truck drivers. Actual experience behind the wheel would still be required in the conventional manner. The cooperative education or in-plant related training applications would be exceptions where correspondence could be used to provide instruction in these particular areas.

THE SELECTION AND DEVELOPMENT OF THE CORRESPONDENCE STUDY COURSE

Course Selection

The first step toward identifying and selecting a course involved analyzing college and university, military, and private correspondence school bulletins and catalogs for existing vocational courses presently taught by correspondence. Contact was also made with the state's vocational curriculum development center at the Metropolitan School District of Washington Township (Indianapolis) in an effort to identify existing curriculum materials that might be adapted for use as a correspondence study course. Mr. Gerald Flack, Director of Curriculum Center, was very informative and helpful. However, a course suitable for the project's purposes could not be identified at the curriculum center. State department consultants in vocational education were also contacted and requested to identify course areas they felt would be appropriate for correspondence instruction and would satisfy the field test requirements for the project.

This preliminary phase of the investigation revealed several course areas that had vocational objectives and purpose. Each course identified in the preliminary investigation was screened on several factors including 1) whether the course was suited to correspondence instruction, 2) the degree of technicality and complexity, 3) the scope of content coverage, 4) whether the course was vocational as defined by federal and state guidelines, and 5) whether the course was an applied skill/competency producing vocational subject or a supplementary (related) vocational subject. After this initial screening procedure, the courses that remained were subjected to a second phase elimination process that related more specifically to their value to the project as a field test

course. Again, a set of criteria was established to assist in selection: 1) can the course be developed, administered, and evaluated in the time available; 2) is there an author available to write the course; 3) will the course be compatible with courses presently offered by the administering agency; 4) is there a sufficient student interest in the course to insure an adequate field test population; and 5) can the course be developed and instructional material secured within the financial limitations of the budget?

By subjecting the course areas to the above delineation procedures, it was possible to reduce the total number and a course in automotive tune-up and maintenance was finally selected. A course in auto tune-up and maintenance was considered to have several advantages in addition to meeting the delimitations previously stated: 1) it is a distinct sub-program of the broad overall vocational category auto mechanics (OE Code 17.0302), 2) indications are that the state will have difficulty meeting the demand for personnel trained in this area (Indiana State Plan for 1974; Occupational Outlook Handbook, 1974), 3) the subject is also suitable for people who have avocational rather than vocational interests, and 4) comparisons can be made between in-school and correspondence study students. The course in automotive tune-up and maintenance was designed to be a career specific preparation program to train or retrain individuals for positions as tune-up specialists, service station mechanics, and automotive diagnosticians.

A course in automotive tune-up and maintenance is also in line with contemporary vocational instructional needs of the nation as the Bureau of Labor Statistics in its 1974-75 Occupational Outlook Handbook predicts favorable to very favorable employment possibilities for mechanics in all

service areas: automobile, boat-motor, diesel, motorcycle, truck and bus and aircraft. Tune-up and maintenance instruction would be necessary in all of these areas. Therefore, the course fills a basic need for instruction in addition to serving as a medium for field testing the feasibility of the vocational education correspondence study concept.

Institution Selection

In an effort to facilitate the dissemination of the pilot or field test course it was felt that affiliation should be made with an agency already involved with providing correspondence study materials and instruction. This agency would be in a better position to administer and disseminate materials developed under the auspices of the project. Assuming this approach, efforts were undertaken to: 1) interview representatives from the various public correspondence study agencies in Indiana, 2) collect certain data from the institutions which could be used as a basis for decision making, 3) identify agencies which would be interested in cooperating on the research project, and 4) use the above data as a basis for making the final selection. Additional factors considered were: 1) scope and size of existing programs, 2) whether vocational instruction was presently offered, and 3) the amount and types of services the agency could and would provide.

After analyzing the various criteria the decision to affiliate with the Independent Study Division at Indiana University was made. This decision was based largely on the following points: 1) Indiana University has the only correspondence study program in Indiana that can offer courses for high school credit; 2) it is the largest correspondence study program in Indiana offering such instruction to over 4000 students; 3) the Independent Study Division has the means of advertising, disseminating,

administering all forms of correspondence study materials; 4) the division exhibited an ardent interest in working closely with the project's staff; 5) staff assistance in the form of media preparation, editing, and correspondence study consultation was made available to the technical author/consultant; and 6) the close proximity of the Independent Study Division to the project headquarters.

Course Development

To develop a course in automotive tune-up and maintenance for field test purposes it was necessary to secure the services of a consultant to determine the scope and depth of the course, outline the course content, and write the study guide for the course. After a careful search and screen procedure had been completed of candidates from around the state, Dr. Richard Barrow, Professor of Industrial Technology at Indiana State University, was retained as the technical consultant to the project. Dr. Barrow is a recognized authority in the field of power and transportation education, has authored several articles and at least one book in the area, and has taught at the secondary and post secondary levels for many years.

To expedite course development and insure that well developed textual and visual materials would be available to the student, the decision was made to use the latest edition of a popular automotive mechanics textbook (Crouse, 1974) as the primary source of content subject matter. The automotive mechanics textbook material was supplemented by an additional tune-up manual (Tune-up Service, 1973) and the current issue of common repair specification manual (Motor, 1975). Background information, lesson objectives, supplemental information, study assignments, activity assignments, and proficiency assignments were incorporated into the study guide that was compiled by Dr. Barrow. The study guide served as the nucleus of the course and directed the student's learning experiences.

Materials used in the course were evaluated and validated by a practicing vocational auto mechanics teacher to insure that they would serve their intended purpose and meet the training needs of students. Mr. Joe Peyronnet of the Monroe County Area Vocational School evaluated the course and it was his conclusion that the course was well conceived, adequately presented, and would meet the training needs of students who desired to learn automotive tune-up and service by correspondence.

Course Dissemination and Administration

It was necessary to perform a statewide publicity campaign to inform prospective students about the availability of the correspondence study auto mechanics course. To facilitate this campaign several strategies were employed: 1) brochures describing the course were sent to the principal of each Indiana public, parochial, and private high school; 2) a duplicate brochure mailing was made to counselors in all Indiana high schools; 3) personal visits were made to several private, parochial, and public high schools in the central Indiana area; 4) three Indiana newspapers published articles on the project; 5) a project staff member appeared on a local television interview program; and 6) a follow-up mailing was made to all people who expressed an interest in the course but did not enroll initially.

Eventually a total of 33 students enrolled in the course: 22 of these students were in a supervised correspondence study class at Ben Davis High School in Indianapolis, and 11 of the students were conventional correspondence study enrollees living in various communities across the state.

The course was administered by the Independent Study Division at Indiana University under the direction of Dr. Lawrence Keller. The Independent Study Division assumed responsibility for: 1) enrolling students, 2) dispensing

study guides and learning resource materials, 3) coordinating the exchange of lessons between the course instructor and the student, 4) maintaining student records, and 5) arranging for student evaluation cites.

The course was taught by Mr. Tom Walker, a licensed vocational education auto mechanics teacher, who is employed at Bloomington (Indiana) High School South.

REACTIONS TO CORRESPONDENCE STUDY FROM SELECTED GROUPS

Reactions from Vocational Administrators Regarding the Correspondence Study Concept

The success or failure of any instructional delivery system is linked directly to the acceptance and infusion-implementation efforts of those who must approve and encourage the use of the system. In secondary schools, area vocational schools and comprehensive high schools, vocational education administrators would be exceedingly influential in determining the overall acceptance and utilization of vocational education correspondence study materials. In an effort to secure reactions from these vocational education administrators, a questionnaire (Appendix F) was mailed to 51 LEA vocational administrators. This questionnaire was designed to determine the relative need and potential utility of a statewide vocational education correspondence study program. Forty questionnaires were returned yielding a 78.4 percent rate of response.

Need for a Correspondence Study Program. As with so many factors relating to correspondence study, the reactions and opinions of vocational administrators were varied regarding the value of vocational education correspondence instruction. When asked, "Assuming that correspondence courses are capable of providing students with the necessary skills and competencies for employment, do you feel that vocational education correspondence study courses would be of significant need and value as a supplemental or alternative means of providing vocational education in Indiana," 16 (40.0%) administrators answered "yes," 21 (52.5%) responded "no" and 3 (7.5%) did not answer the question or provide qualified "yes" or "no" answers. This information is summarized in Table 2. Marginal comments expressing the administrator's skepticism that correspondence study courses were capable of providing students with skills and competencies necessary for employment were also frequently noted.

Table 2

Vocational Administrator's Opinions Regarding the Relative Need and Value of a Statewide, Public Supported Vocational Education Correspondence Study Program

Would a program of this type be of need and value?	Number	Percent
Yes	16	40.0
No	21	52.5
No response or qualified "yes" or "no" response	3	7.5
Total	40	100.0

Regional Interest in Vocational Correspondence Study Education. It was felt that the vocational administrators could serve as a barometer to gauge the interest of students in their respective geographic areas since vocational administrators are expected to stay abreast of local occupational needs, the availability of vocational instruction in their communities, and the vocational education interests of their constituent publics. The question, "Do you feel there are adult and/or secondary school students in your region who would have an interest in taking correspondence study vocational subjects provided through a public agency," was therefore asked to determine the level of interest prospective students might possess in a vocational education correspondence study program. Fifteen (37.5%) administrators responded in the affirmative; 5 (12.5%) indicated "no" and 19 (47.5%) indicated they "didn't know." The information is summarized in Table 3. The high "don't know" response was not surprising since it is very difficult to judge student interest prior to course selection and

Table 3

Vocational Administrator's Perceptions of Student Interest in a Vocational Education Correspondence Study Program in Their Respective Regions

Are there students in your region who would be interested in taking vocational correspondence study subjects?	Number	Percent
Yes	15	37.5
No	5	12.5
Don't know	19	47.5
No Response	1	2.5
Total	40	100.0

product development. Influencing factors such as economic conditions, employment opportunities, availability of local resident instruction, cost, time required to complete the course, amount of credit granted for course completion, etc., are but some of the influences which would be determinants in forecasting student participation which cannot be fully assessed. About all that a planner or developer can do is collect information that is available and make tentative predications based on the available data. This paradigm exists for resident programs as well as correspondence instruction. Unfortunately, the data base is much less homogeneous and more difficult to obtain when dealing with prospective correspondence study students--making the decision as to whether or not to offer a correspondence study program even more difficult than it is for a residential program.

Vocational Education Subjects Desirable for Correspondence Study. Two related questions, "In your geographic area, are there unmet needs for vocational courses that could be taught, partially or fully, by correspondence instruction?" and "If yes, what vocational courses," were asked to gain a feeling for the kinds of courses vocational administrators would like to see offered if a correspondence study program were to be initiated. As shown in Table 4, 18 (45.0%) administrators responded "yes" and 16 (40.0%) answered "no" to the initial question. The courses listed in

Table 4

Vocational Administrator's Perceptions of Correspondence Study Vocational Education Needs in Their Regions

Are there unmet needs for Vocational courses that could be taught, partially or fully, by correspondence instruction?	Number	Percent
Yes	18	45.0
No	16	40.0
No Response	6	15.0
Total	40	100.0

Appendix G were those suggested administrators who responded "yes" to the lead question. As can be noted the preponderance of support was given to related vocational subjects such as mathematics, print reading, related science, etc., and courses that are presently not being offered in the various vocational schools due to insufficient enrollment and other intervening circumstances.

Question 4, "Would you be interested in using correspondence study materials in your vocational education program to supplement or enrich your present in-school curriculum," attempted to cross check the administrators' acceptance of the correspondence study concept. It is encouraging to note that only 4 (10.0%) indicated that they would have no use for such a program. The largest number of respondents, 18 (45.0%), indicated that they were "undecided." The "undecided" option was in all likelihood selected, pending the administrators' examination of a sample vocational correspondence study course and the kinds of courses that would be developed. Sixteen (40.0%) of the administrators indicated they would be interested in using correspondence study materials to supplement existing vocational programs. These data are summarized in Table 5.

Table 5

Vocational Administrator's Reaction Regarding the Use of Correspondence Study Materials in Their Present Vocational Programs

Would you be interested in using correspondence study materials in your vocational education program to supplement or enrich your present in-school curriculum?	Number	Percent
Yes	16	40.0
No	4	10.0
Undecided	18	45.0
No Response	2	5.0
Total	40	100.0

Since reactions were mixed and at times contradicting, it is difficult to ascertain from this questionnaire item and those previously analyzed whether vocational administrators would in fact accept and encourage the use of vocational correspondence study courses if a system were created to develop and disseminate them.

Factors Inhibiting the Formation and Use of a Correspondence Study Program in Vocational Education. The question, "What factors, in your opinion, would most inhibit the formation and use of correspondence study as a means of delivering vocational education in Indiana," was used to determine factors which would restrict the development and utilization of a vocational education correspondence study program. A large number of issues were postulated and these are presented in Appendix H. The majority of issues offered few surprises, however, as most have appeared in the correspondence study literature: 1) the lack of practical "hands-on" experiences; 2) the feeling that correspondence study is an inappropriate method of teaching vocational subjects; 3) the problem of maintaining student interest and motivation; 4) the inability of traditional school administrators to accept the concept and allow credit for work completed via correspondence; and 5) the students' inability to secure necessary equipment, instructional materials, and other needed resources were the limitations most frequently cited.

It is quite obvious that the need to facilitate manipulative, activity based learning experiences looms as the greatest obstacle to be overcome if correspondence study courses are to be used in vocational education. Any vocational education correspondence study must make provisions for surmounting this obstacle.

Administration of a Vocational Education Correspondence Study Program. Vocational administrators indicated strongest support for a vocational

correspondence study program administered through the Division of Vocational Education when asked to select the agency they thought should administer a correspondence study program. College or university extension division(s) ranked second and comprehensive high school or area vocational schools ranked third.

Other administrative structures in the form of 1) high schools or area vocational schools operating through the Division of Vocational Education and 2) a private business certified by the state were alternatives also given.

The decision to favor the Division of Vocational Education was undoubtedly based largely on the notion that colleges and universities rarely provide instructional services to high schools and that few school corporations will go beyond their own geographic boundaries to provide instruction to students in other school districts.

It must be remembered, however, that the Division of Vocational Education has not engaged in the actual provision of instructional services to students and that their role has been limited to legislative and administrative concerns within the state. Therefore, the Division of Vocational Education could be involved in correspondence study education only in an indirect ex officio capacity. The responsibility of developing and offering correspondence study courses would most likely be delegated to other more appropriate agencies under the auspices of the Division of Vocational Education if the DVE assumed responsibility for correspondence study programs. These other agencies might be private schools, colleges or universities, high schools, and/or non-profit educational agencies which could contract with the Division of Vocational Education to provide correspondence study instructional products and services.

General Reactions of Vocational Administrators. A number of positive and negative comments were given in the space provided for such comments at the end of the questionnaire. Most of the comments expressed concern about the inappropriateness of correspondence study for vocational subjects or supported its use in specific areas such as related subjects or subjects not being offered at the present time. A summary of comments is provided in Appendix I.

Reactions from Indiana Correspondence Study Agency Personnel Regarding Enrollment and Program Operation

In an effort to obtain accurate information on the number of students taking correspondence study courses, the vocational courses most frequently requested and program operation data, a questionnaire (Appendix K) was sent to the chief administrator for correspondence study programs in the state's three institutions providing correspondence study instruction: Ball State University, Indiana State University, and Indiana University. Neither Purdue University, Vincennes University nor the Indiana Vocational Technical College offer correspondence study programs.

Correspondence Study Courses Offered in Agencies. The only institution that offers correspondence study courses for high school students in Indiana is Indiana University which has some 75 such courses. In these courses they enroll approximately 2000 high school age students. These students not only reside in Indiana, but several other states, as well as foreign countries and trust territories of the United States. Since the other institutions did not offer high school subjects, they consequently did not report having students enrolled in such programs.

Indiana University also reported 20 high school students enrolled in college or university level subjects as did Ball State University with

approximately the same number of students. The practice of allowing high school students to take college or university level subjects is used at times for students who are nearing high school graduation and have completed most of their graduation requirements. This practice allows students to begin taking college subjects and have a "head start" on other students when they do finally begin college work. These students are generally seniors who are not taking a full schedule of high school studies.

Apart from high school or college/university courses, one of the institutions, Indiana University, offers 9 non-credit correspondence study courses. These courses are frequently of a general interest or avocational skill nature and are not intended to meet graduation requirements. Ball State University and Indiana State University restricted their correspondence study offerings to those courses that could be taken for college or university credit.

Ball State University reported having 56 college or university correspondence study courses; Indiana State University had 80; and Indiana University, the largest correspondence study school, indicated having 155 university level correspondence study courses. The other institutions, Ball State University and Indiana State University, reported respective student enrollment of 195 and 1200.

Ball State University indicated that the vocational type courses most frequently requested were accounting and journalism; Indiana State University received requests for child welfare, business communication, personal health, and first aid; and Indiana University did not report receiving any requests for vocational type courses.

Reaction was mixed concerning the correspondence study administrator's opinions regarding the need for a vocational education correspondence study

program. One administrator indicated there is a need, one indicated there isn't a need, and one indicated he was undecided on whether there was a need for a vocational education correspondence study program.

Cost of Correspondence Instruction. All three institutions indicated that the costs of correspondence study instruction were less than the costs of comparable in-residence instruction. The amount less ranged from 20% to 80% below that of resident instruction with the average cost being 46.7% less than traditional courses. The wide span of expense savings reported by correspondence study administrators was expected since the literature indicates that it is extremely difficult to determine true operational costs especially when indirect costs such as insurance, depreciation, utilities, overhead, maintenance, etc., are included. About all that can be safely concluded is that correspondence instruction appears to be less costly.

Minimum Correspondence Study Enrollment. Correspondence study administrators were asked the minimum number of potential enrollees per year that would be necessary before it would be economically feasible to develop and offer a correspondence study course. The number ranged from a low of 5-9 to a high of 20. Even the largest number would be sonsiderably less than the minimum number required for most in-residence courses.

Appropriate Administering Agencies. College or university extension division(s) were considered the most appropriate administering agencies for a vocational education correspondence study program by two of the respondents. The third respondent felt that any of the following would be an appropriate administering agency: college or university extension division, comprehensive high schools or area vocational schools, or the Division of Vocational Education in the State Department of Public Instruction.

Factors Inhibiting the Developmental and Utilization of a Vocational Education Correspondence Study Program. The limiting factors correspondence study administrators listed as being most crucial parallel those expressed by vocational administrators: the students' inability to use or secure needed equipment, supplies, tools, and other necessary resource materials; only a few vocational courses are suitable for correspondence study; lack of student interest and motivation; and meeting the specific training and occupational needs of the student.

Reactions from Students Enrolled in Automotive Mechanics Correspondence Course

A follow-up questionnaire (Appendix M) was sent to students who had enrolled in the automotive mechanics correspondence course. Interviews with the students and staff of the alternative school were used to gather the data for this study. The reactions are divided into two groups, advantages and disadvantages followed by a summary. A statistical evaluation of the response to the questionnaire was not undertaken for the following reasons:

1) The average number of lessons completed by the students was not sufficient for an accurate report. A later follow-up was not administered because of the termination date for this project. It was felt that the students needed to complete at least 10 of the 13 lessons for a valid follow-up report.

2) Majority of the students enrolled in the class were part of an alternative school program; consequently, this setting did not provide for a true evaluation of the entire correspondence study concept.

Advantages. The most generally stated advantage of the correspondence course was the fact that it could be done at the individual's own pace and convenience. For example, one individual taking the course stated that he was able to be a full-time employee while taking the course. Another student commented that he was able to take this course when he was not old enough for the vocational courses in high school. The students who desired to work in this area in the future said that it provided some helpful information which

they had not received in their auto mechanics class at school, hopefully increasing the possibility for employment. The course also increased their ability to work on their own and search out their own answers.

Another advantage of the correspondence course is that the length of the course is related to the student's achievement and mastery rather than school quarters or semesters. Several students commented that it was nice to be able to form their own study schedule instead of having to follow a conventional school routine. Sickness had caused one student to stop work on the course but he reported that since there were no classes to make up he would be able to complete the course. As one student put it, "It is like having the resources of the university available in your home."

Disadvantages. The students and staff both agreed that acquiring tools seemed to be one of the most reoccuring problems. Tools needed included the following: general mechanics tools set, $50-$60; a tachometer, $12; powered timing light, $17-$30; vacuum-pressure tester, $4; battery hydrometer, $3.50; an antifreeze hydrometer, $3; a volt-ohmmeter, $10; and compression tester, $12. The students who were in the alternative school program were able to use the school's tools but in the months that followed after school, many students had to stop work on the course because of no tools. Most of the students lacked money to buy the tools in addition to not knowing of other sources for borrowing the tools. One student suggested that a garage in the community be used as a source for tools, where the students would bring their cars to the garage and use the tools there.

Many students also expressed the lack of immediate feedback for questions and completed lessons. In addition, there was the problem of not being able to observe how to perform certain tasks while working on their cars. Problems arose for one student because the course prepared students to work on American

cars and he owned a foreign car. The staff who worked with the students in the alternative school program said that some students had problems with reading the materials for the correspondence course; however, most of these students had had previous reading problems.

Summary. In view of the preceding advantages and disadvantages, the question can be asked, "How can such a correspondence course for an area that requires 'hands-on' instruction be used in a vocational program?" An automotive mechanics teacher interviewed in a vocational school replied with this comment, "This correspondence course would be an asset to my class as a remedial program for those students who are lacking or have forgotten some of the basic auto mechanics skills." By having the correspondence course as a supplement to regular classroom instruction, the problems of not having tools and lack of immediate feedback for questions would be eliminated. The students could use the tools belonging to the school. The classroom instructor or assistant instructor, which could be an advanced student, would supply instruction or guidance when needed. The students would have the opportunity to work at their own pace as is the advantage of any correspondence program. The grading for the lessons could be done by the classroom instructor which would eliminate an additional person for scoring the completed lessons.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this project was to study the feasibility of an independent study program in vocational education. A search of the literature supplied information on the past use of independent study programs in vocational education and other areas. Factors related to the acceptance, cost, and development of independent study programs were reviewed. A model, which recognized the stages of development for a correspondence study course, was established and used to facilitate the construction of the auto-mechanics course used in the study. The Indiana University Independent Study Division assisted in the formation and dissemination of the course materials.

A field test was conducted with thirty-three students enrolled in the auto-mechanics correspondence course. The object of this activity was to determine the effectiveness of independent study programs in vocational education. By the conclusion of the project the students enrolled in the auto-mechanics course had not completed a sufficient number of lessons to provide statistically discriminating feedback as to the feasibility of this particular course. However, general conclusions can still be made regarding the feasibility of vocational education independent study courses involving "hands-on" activities, as evidenced by the auto-mechanics course, as well as independent study courses without such activities.

Conclusions

1. If the following situational factors are present, development of an independent study program in vocational education would be possible:

   a) There are not adequate post secondary and secondary vocational

programs to meet the need for instruction in a specific area.

b) The vocational education courses needed could be adequately taught through an independent study program.

c) There are enough students interested in the course to warrant its development.

d) Students and prospective employers accept training through the use of the independent study program.

e) There are ample resource materials and an educational agency which would develop and disseminate the course.

f) The curriculum can be reduced to written and/or portable audio-visual media and necessary "hands-on" activities can be accounted for.

2. "Hands-on" activities in independent study courses may be facilitated through the following methods:

a) Have the student use his own, a cooperating school's, or a cooperating employer's facilities, equipment, and supplies.

b) Allow the student to do what he can at home and then have him attend resident instruction where he can obtain interaction with instructor and classmates.

c) Mail or transmit portable items to the student for home use. This alternative is feasible when the kind and amount of materials to be loaned or sold to the students are within reason.

3. Related vocational subject matter such as shop math, related science, blueprint reading, etc., would adapt easily to independent study courses.

4. Remedial instruction for students in resident vocational programs could be facilitated through independent study programs.

5. Independent study courses can reach students who cannot attend residential schools because of: incarceration, geographic inaccessibility, family responsibilities, time availability, etc.

6. The agency offering the independent study program needs resources for promoting, disseminating, and administering all forms of the independent study materials.

7. Independent study programs are between 20 percent and 80 percent less expensive than equivalent in-residence instruction.

8. Indiana high schools may now assume the cost of correspondence instruction for their students in cases where equivalent instruction is not available or provided for by the school corporation.

Recommendations

1. This project was restricted time wise to the development and administration of only one course. Effort should be made to accumulate on a continuing basis, data related to the success of this and other independent courses in vocational education.

2. The combination of resident instruction with independent study programs needs further investigation.

3. Care needs to be taken in selecting courses for independent study programs. A course with the following characteristics would not adapt well to instruction through independent study.

a) A highly technical course.

b) A course which normally requires over one year's length in traditional in-school program.

c) A course which cannot be effectively subdivided into modules or units of instruction.

d) A course which relies heavily on manipulative activities.

e) A course requiring constant and intensive teacher supervision and tutoring.

f) A course based on lecture or discussion between class members or student and teacher.

4. A comparison should be made of outcomes of students enrolled in vocational education independent study programs with those in traditional courses.

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APPENDICES

Appendix A

Vocational Courses Available from Private Correspondence Study Schools

Vocational Courses Available From
Private Correspondence Study Schools

Accounting
Advertising
Agriculture
Air Conditioning
Aircraft Drafting
Appliance Servicing
Architectural Drafting
Architecture
Auto Body and Fender
Automotive Work
Baking
Blueprint Reading
Boilermaking
Bookkeeping
Bricklaying
Building Construction, Estimating & Maintenance
Bus Driving
Camera Repair
Carpentry
Carpet Installation
Clerical
Commercial Art
Computer Programming
Construction
Custodial Maintenance
Data Processing
Dental Assisting
Drafting
Dressmaking & Design
Driver Training
Drycleaning
Electrical Drafting
Electricity
Electricity, Automotive
Electronics
Electroplating
Engines & Engine Tune-up
Filing
Flower Arrangement and Floristry
Food Service & Administration
Forestry
Forging
Foundry
Furniture, Upholstery, and Slipcovers
Gardening
Gemology
Graphic Arts
Grinding
Gun Repair
Heat Treating
Heating & Ventilation
Heavy Equipment Operation, and Maintenance
Home Repair
Horticulture
Illustration
Instrumentation
Internal Combustion Engines
Jet Engine Maintenance
Jewelry Design & Making
Landscaping & Gardening
Lathe
Locksmithing & Repair
Machine Drafting
Machine Shop & Trades
Maintenance, Custodial
Mapping and Surveying
Masonry
Meat Packing
Mechanical Drafting
Mechanics, Automotive
Medical Office Assisting
Medical Record Science & Medical Terminology
Medical Secretary
Medical Transcription
Merchandising
Metallurgy
Motor Tune-up
Motors & Generators
Office Practices & Management
Organ Repair, Electronic
Photography
Piano Tuning & Repair
Pipe Fitting
Plastering
Plumbing
Programming, Computer
Refrigeration
Roof Framing & Trusses
Secretarial
Sheet Metal
Shop Mathematics
Steam Fitting
Tractor Maintenance & Repair
Transistors
Truck Driving
Trucks, Maintenance & Repair
Typewriter Repair
Typing
Welding
Wiring
Woodworking

Appendix B

Vocational Correspondence Courses Provided by Member Colleges and Universities of the National University Extension Association

Vocational Correspondence Courses Provided by Member Colleges and Universities of the National University Extension Association.

Accounting
Computer and Data Processing
Financial Accounting
Agriculture
Agronomy
Animal Nutrition
Animal Sciences
Beekeeping
Crop Production
Dairying
Feeds and Feeding
Fertilizers
Floral Arranging
Forestry
Horse Production
Horticulture
Insect Control
Land Utilization
Landscape Planning
Livestock
Turf Grass Culture
Wildlife Management
Architecture
Design and Drawing
Graphic Communication
Residence Architecture
Art
Design and Color
Drawing and Painting
Fashion
Home Furnishing
Illustration
Interior Design
Layout
Lettering
Perspective
Aviation
Ground Instruction
Business
Data Processing
Law (Business)
Electronic Data Processing
Job Analysis
Labor Relations
Marketing
Advertising
Public Relations
Retailing
Salesmanship
Secretarial Administration
Business Communication
Filing Systems and Records Management
Office Management
Secretarial Practices
Shorthand
Typing
Distributive Education
Engineering
Automotive Electricity
Computer Graphics
Computer Programming
Construction Technology
Descriptive Geometry
Drawing and Drafting
Electrical
Electric Circuits
Electric Currents
Electronics
Electronics Technology
Fire Protection Technology
Graphics and Geometry
Highways
Hydraulics
Hydrology
Internal Combustion Engine Theory
Irrigation
Machine Design
Fluids
Mechanics
Strength
Product Design
Mechanics Fluids
Metallurgy
Photogrammetry
Surveying
Nutrition
Child Care and Development
Clothing
Consumer Problems
Dietetics for Nurses
Diet Therapy
Drawing: Interior Design
Environmental Design
Family Development
Family Finance
Family Health

Home Planning and Management
Human Development and the Family
Interior Decorating
Marriage and Family Planning
Relationships, Personal
Textiles
Advertising Principles
Landscape Architecture
Photography
Dental Anatomy and Assisting
Aeronautics
Bookkeeping
Clerical Practice
Marketing
Physical Distribution
Secretarial Practice
Typing
Distributive Education
Forestry
Wildlife
Arc Welding
Automotive Mechanics
Woodwork
Electricity. Radio, Television
Home Wiring
Plumbing
Radio and TV Servicing

Appendix C

Vocational Correspondence Study Courses Provided by Indiana Colleges and Universities

Vocational Correspondence Study Courses
Provided by Indiana Colleges and Universities

Ball State

Accounting

Indiana University

Accounting
Business Administration
Textile
Foods and Nutrition
Bookkeeping
General Business
Shorthand
Typewriting
Business Law
Data Processing
Interior Design
Mechanical & Architectural
Drawing (Industrial Arts)

Indiana State University

Accounting

Indiana Voc-Tech College

None

Purdue University

None

Vincennes University

None

Appendix D

Occupational Areas (Rank Ordered by Frequency) in Indiana in Which Available Manpower Supplies Do Not Meet Needs as Identified by Employment Security Division Regional Directors

Occupational Areas (Rank Ordered by Frequency)
in Indiana in Which Available Manpower Supplies
Do Not Meet Needs as Identified by Employment
Security Division Regional Directors

Professional Nurse
Machinists
Tool and Dye Makers
Sewers and Stitchers
Practical Nurse
Cooks and Chefs
Stenographers
Secretaries
Heating and Air Conditioning Installers and Repairmen
Electricians
Private Household Workers
Insurance Sales
Motor Vehicle Mechanic
Industrial Machinery Repairmen
Waiters and Waitresses
Electrical Technician
Bookkeepers
Appliance Repairmen
Body and Fender Repairmen
Dye Setters
Millwrights
Nurse's Aid
Rehabilitation Therapist
Automotive Technician
Electronic Technician
Accountants
Keypunch Operators
Draftsmen
Pattern Makers
Mechanical Technician
Typists
Heavy Construction Equipment Operator
Masons
Plumbers and Pipefitters
Machine Tool Operators
Welders and Flamecutters
Charwomen and Cleaners
Dairy Farm Workers
Medical and Lab Technician
Hospital and Other Institution Workers
Computer Programmers
Clerk Typist
Carpenters
Roofers
Electrical Motor Repairmen
Meat Cutters

Radiologic Occupations
Industrial Technician
Food Services
Bookkeeping Master Operators
Foundrymen
Beauty Operators
Bakers
Upholsterers
Janitors
Dental Technician
Chemical Technician
Apparel and Accessories Sales
Tellers
Manager Trainees
Boilermakers
Plasterers
Plastic Craftsmen
Tailors
Cabinet Makers
Bus and Cab Drivers
Laundry and Dry Cleaning Occupations
Counter and Fountain Workers
Grain Farm Workers
Vegetable Farm Workers
Landscape Gardeners
Nursery Workers
Environmental Health Occupations
Administrative Managers
Office Machine Repairmen
Structural Metalworkers
Nursery Workers
General Merchandise
General Office Clerk
Stock and Inventory Clerk
Commercial Photography
Painters and Decorators
Printing Occupations
Truck Drivers
Deliverymen
Park Workers

Appendix E

Cover Letter Sent to Vocational Administrators
Requesting Response to Correspondence Study Questionnaire

INDIANA UNIVERSITY
School of Education
BLOOMINGTON, INDIANA 47401

VOCATIONAL EDUCATION PROGRAM AREA
223 SOUTH JORDAN AVENUE

TEL. NO. 812—337-8104

As vocational educators we are all concerned with meeting the occupational preparation needs of all students in our state. In an effort to design and test supplemental instructional delivery systems to accomplish this goal, the Indiana State Board for Vocational and Technical Education recently provided a grant for Indiana University to explore the feasibility of using the correspondence study technique as a means of providing vocational instruction in addition to the methods presently being used. The intent of this approach is not to supplant existing programs but to reach students not presently being served.

A part of this investigation relates to vocational administrator's feelings regarding appropriate course areas for vocational correspondence instruction and their overall reactions towards the concept of correspondence instruction In Indiana. Correspondence study has proven to be of significant value in many business and industry, military and professional association training situations yet it has not been widely used by public agencies to provide vocational training. Therefore, we would like to have your reactions, on the enclosed questionnaire, to some issues relating to the possible use of vocational education correspondence study in our state as we attempt to determine the strengths and limitations of this approach.

Thank you in advance for your insights and cooperation in completing and returning the accompanying questionnaire.

Sincerely,

Dennis G. Fruits
Project Director

Appendix F

Correspondence Study Questionnaire
for Vocational Administrators

CORRESPONDENCE STUDY QUESTIONNAIRE FOR VOCATIONAL ADMINISTRATORS

1. Assuming that correspondence courses are capable of providing students with the necessary skills and competencies for employment, do you feel that vocational education correspondence study courses would be of significant need and value as supplemental or alternative means of providing vocational education in Indiana?

_____Yes
_____No

2. Do you feel there are adult and/or secondary school students in your region who would have an interest in taking correspondence study vocational subjects provided through a public agency?

_____Yes
_____No
_____Don't Know

3. In your geographic area, are there unmet needs for vocational courses that could be taught, partially or fully by correspondence instruction?

_____Yes
_____No

If yes, what vocational courses?

_____
_____
_____
_____
_____
_____

4. Would you be interested in using correspondence study materials in your vocational education program to supplement or enrich your present in-school curriculum (e.g. in cooperative education classes for related instruction, etc.).

_____Yes
_____No
_____Undecided

5. What factors, in your opinion, would most inhibit the formation and use of correspondence study as a means of delivering vocational education in Indiana?

_____

_____

_____

_____

_____

6. If a public supported vocational education correspondence study program were initiated in Indiana, which of the following would be the most appropriate administering agency? (NOTE: Disregard whether it is for high school or post high school students.)

_____ College or university extension division(s)

_____ Comprehensive high school(s) or area vocational school(s)

_____ State Department of Public Instruction

_____ Division of Vocational Education in the Department of Public Instruction

_____ Other (please specify) _____

_____

7. Please add any additional comments, concerns, or reactions you might have concerning the use of correspondence study materials as a means of providing vocational instruction.

_____

_____

_____

_____

THANK YOU

Dennis G. Fruits
Vocational Education Department
Indiana University
223 South Jordan Avenue
Bloomington, Indiana 47401

Appendix G

Subjects Vocational Administrators Recommend Be Taught by Correspondence Study Grouped by Discipline Area

Subjects Vocational Administrators Recommend Be Taught By Correspondence Study Grouped By Discipline Area

Subject	Frequency
Related Vocational Education Subjects	
Related subjects (subjects not specified)	6
Vocational related mathematics	4
Blue print reading	3
Career orientation	1
Decision making skills	1
Metrification	1
Communication skills	1
Agriculture Education	
Farm management and economics	1
Business and Office Education	
Data processing	1
Business Law	1
Bookkeeping	1
Computer technology	1
Business Education	1
Consumer and Homemaking Education	
Distributive Education	
Distributive Education	1
Marketing	1
Advertising	1
Insurance sales	1
Real estate	1
Health Education	
Home nursing	1
Trade and Industrial Education	
Electricity/Electronic	4
Refrigeration and air conditioning	2
General maintenance	2
Manufacturing processes	1
Graphic arts	1
Mechanical drawing	1
Metalurgy	1
Hydraulics	1
Precision measurement	1

Subject	Frequency
Trade and Industrial Education (cont'd)	
Machine shop	1
Radio and T.V. repair	1
Architectural drawing	1
Business machine maintenance	1
Plumbing and pipefitting	1
Leather working	1
Other	
Vocational subjects in which we do not have sufficient enrollment for a formal class	3
Non-manipulative skill vocational course	1
Courses not presently offered in the vocational schools	1
Apprenticeship training for non-union apprentices	
Alternative school courses	1
Courses in the "World of Work"	1
Technical Report Writing	1
Migrant Basic Education	1

Appendix H

Factors Suggested by Vocational Administrators That Would Inhibit the Formation and Use of a Vocational Correspondence Study Program

Factors Suggested by Vocational Administrators That Would Inhibit the Formation and Use of a Vocational Correspondence Study Program

Frequency	Factor
1	Relation to career objectives and skill training
1	Course would become worthless, not up-to-date
1	Limited on what can be taught
1	Possible cause for more dropouts
2	Violators learn by doing philosophy
1	Lack of resource person when problems arise
1	Participants willingness to study on their own
10	Lack of practical or "hands-on" experience
5	Inability to develop skills through correspondence
1	Slow turn around time
4	Maintaining interest would be difficult
3	Inability for "traditional" school administration to accept the concept and provide high school credit
2	Communication with prospective students and development of a delivery system that could produce good results
1	Close proximity of several colleges, universities, and IVTC which can offer similar resident courses
1	Most schools implement courses in which a need has been determined
1	Must be for related subject only - skill subject must be resident
1	No vocational youth organization
1	Lack of local business and industry input
1	Inability to structure course sufficiently for each student's needs
1	Lack of provision for discussion
1	Selection of study materials would be limited
3	Lack of equipment, space, instruction materials and other needed resources
1	Students are likely to function better in a regular school environment
1	Student background too varied
2	Prohibition costs
1	No person to person exposure to journeymen instructors
1	Courses do not take place in proper environment
2	No true means of evaluating work
1	Lack of student-teacher contact

Appendix I

General Comments from Vocational Administrators Concerning the Use of Correspondence Study Materials as a Means of Providing Vocational Instruction

General Comments from Vocational Administrators
Concerning the Use of Correspondence Study Materials
as a Means of Providing Vocational Instruction

There are enough people involved with this type of education now.

Make courses relative to and compatible with the skills and needs of students.

I have a negative opinion of the value of this approach.

"Hands-on" experience is most important, however, I feel the theory portion of a course could be by using correspondence materials.

It is impossible to design and offer a course with vocational objectives using correspondence study techniques.

Development costs would be high.

There is probably a great deal of merit in this idea for related subjects.

Correspondence courses should be offered in only a few very specialized course areas.

There is a lack of close student-teacher association.

Correspondence study courses should not duplicate existing programs.

A broader base than just one state would be needed to justify expenditures for development, implementation, monitoring and evaluation.

Correspondence study materials should be used for vocational teaching purposes rather than developing job skills.

A correspondence study would provide another excuse for school corporations to circumvent their responsibilities for providing broad vocational curriculum offerings.

Appendix J

Cover Letter Sent to Indiana Correspondence Study Agency Personnel Requesting Response to Correspondence Study Questionnaire

INDIANA UNIVERSITY
School of Education
BLOOMINGTON, INDIANA 47401

VOCATIONAL EDUCATION PROGRAM AREA
223 SOUTH JORDAN AVENUE

TEL. NO. 812—337-8104

The Vocational Education Program Area at Indiana University was recently awarded a grant to study the feasibility of using the correspondence study technique as an alternative and/or supplement to traditional in-school vocational education instruction.

Vocational education is roughly defined as instruction that will prepare a person for an occupation not requiring a baccalaureate degree. Typically, students take courses such as typing, machine shop, auto mechanics, salesmanship, child care, horticulture, etc. in the fields of trade and industrial education, business and office education, health science, home economics, distributive education and agriculture.

As a part of this feasibility study a profile of present correspondence study programs is being compiled to aid in determining whether additional correspondence study programs are needed. Additionally, some basic information concerning program operation is being solicited.

Your assistance in completing and returning the enclosed questionnaire will assist us greatly as we seek to undertake this study. It is realized that some of the questions we are asking do not lend themselves to quantifiable answers and depend on many variables. Therefore, we are asking only for averages, estimates and your intuitive judgement as an experienced administrator who has worked in the field of correspondence study education.

Your cooperation with this request will be sincerely appreciated. If you have any questions or concerns please do not hesitate to call me at (812) 337-8104.

Yours truly,

Dennis G. Fruits
Project Director
and Visiting Lecturer

Appendix K

Correspondence Study Questionnaire
for Personnel of Indiana Correspondence Study Agencies

Correspondence Study Questionnaire

1. How many correspondence study courses do you offer for high school credit? _____

2. How many correspondence study courses do you offer for college or university credit (undergraduate and/or graduate)? _____

3. How many non-credit correspondence study courses do you offer? _____

4. Approximately how many high school age students are in your program taking high school subjects? _____

5. Approximately how many high school age students are in your program taking college or university courses? _____

6. Approximately how many college or university students are in your program taking college or non-credit courses? _____

7. What vocational education type courses are most frequently requested and approximately how many requests do you received each year?

Courses	Requests/Year
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

8. Based on your experience with correspondence study in this state, do you feel there is sufficient need and demand for a publicly supported correspondence study program in vocational education?

_____ Yes

_____ No

_____ Undecided

9. What, on the average, would you estimate that it costs to offer a correspondence course in comparison to traditional in-residence courses. (NOTE: consider cost factors such as: buildings and facilities, indirect costs, administration costs, tuition and any other factors that would be associated with either form of instruction.)

_____ Correspondence instruction cost more
_____ About the same
_____ Correspondence instruction is 20% less expensive
_____ Correspondence instruction is 40% less expensive
_____ Correspondence instruction is 60% less expensive
_____ Correspondence instruction is 80% less expensive
_____ Cannot be determined

10. How many students in a year would need to enroll in a correspondence study course before it would be economically feasible to develop and offer it?

_____ students per year

11. If a vocational education correspondence study program were to be established and operated in this state, which of the following would be the most appropriate administering agency? (NOTE: Disregard whether it is for high school or post high school students.)

_____ College or university extension division(s)
_____ Comprehensive high school(s) or area vocational school(s)
_____ State Department of Public Instruction
_____ Division of Vocational Education in the Department of Public Instruction
_____ Other (please specify) _____

_____

12. What factors do you feel would most inhibit the formation and use of correspondence study for providing vocational instruction in this state?

_____

_____

_____

_____

Appendix L

Cover Letter Sent to Students
Requesting Response to Follow-up Questionnaire

INDIANA UNIVERSITY
School of Education
BLOOMINGTON, INDIANA 47401

VOCATIONAL EDUCATION PROGRAM AREA
223 SOUTH JORDAN AVENUE

TEL. NO. 812—337-8104

September 23, 1975

The Vocational Education Department at Indiana University is now in the process of acquiring follow-up information on the correspondence study course in automotive mechanics offered by the Independent Study Division.

We would appreciate your assistance in this follow-up study by completing the enclosed questionnaire and returning it to us in the enclosed self-addressed stamped return envelope. We are aware that you may not have completed the course, but we still feel that you can contribute valuable information regarding this course and future correspondence courses.

All information you provide will be treated confidentially and no individuals will be identified in the final report. Thank you for your assistance.

Sincerely yours,

Peggy Motsch
Project Director

PM:dld

Enclosures

Appendix M

Follow-up Questionnaire for
Automotive Mechanics Correspondence Course

FOLLOW-UP QUESTIONNAIRE FOR
AUTOMOTIVE MECHANICS CORRESPONDENCE COURSE

Instructions:

Please respond to the following questions related to your involvement in the automotive mechanics correspondence course.

Name: _____

Permanent Home Address: _____

City _____ State _____ Zip _____

What is your present age? _____ Sex: Male _____ Female _____

1) What is the highest level of education you have completed as of September 1, 1975? Circle the highest grade completed.

7 8 9 10 11 12 13 14 15 16 17

2) What is your present employment status? (Check one blank only)

_____ NOT EMPLOYED: not looking for work
_____ NOT EMPLOYED: looking for employment
_____ Employed part time
_____ Employed full time

3) If you are employed full or part time what type of work do you do (e.g. secretary, mechanic, farmer)?

_____

4) Are you currently enrolled in a school? Yes _____ No _____
If yes, please check one blank. _____ Part time _____ Full time

5) What was your reason for taking the course? (Check one blank only)

_____ General interest - wanted to know more about the subject area
_____ Wanted to learn a trade related subject for skill preparation or improvement purposes

6) How did you learn about the course? (Check one blank only)

_____ informed by school counselor, principal and/or teacher
_____ told about it by a friend or relative
_____ saw a bulletin, poster, handbill, or some other form of advertisement
_____ other (please specify) _____
_____

7) Why did you decide to take this course by correspondence rather than through a local educational agency such as a high school or adult evening program? (Check one blank only)

_____ class relating to this subject was not offered in my local area
_____ a class relating to this subject was offered in my local area but it was full of students
_____ I wanted to learn the subject on my own and at my own pace
_____ could not work it into my schedule
_____ other (please specify) _____
_____

8) Would you have enrolled in this course if you would have been required to pay the full $22.00 tuition fee? Yes _____ No _____

9) Have you ever taken a correspondence course before? Yes _____ No _____

10) On the average, how much time per week did you devote to your correspondence study course?

_____ hours per week on the average

11) Did you finish the correspondence course on automotive mechanics? Yes _____ No _____
If no, how many lessons did you complete? _____

12) There was an adequate amount of theory and action type activities included in the automotive mechanics course. Yes _____ No _____

If no, please check appropriate blanks.

_____ Too much theory
_____ Not enough theory
_____ Too much activity
_____ Not enough activity

13) The correspondence material provided sufficient instruction for answering the lesson questions and doing the required activities. Yes _____ No _____

If no, why not? (Check one blank only)

_____ questions were hard to understand
_____ it was difficult to locate information related to questions
_____ questions were not specific
_____ other (please specify) _____
_____

14) How did you secure the tools, equipment, etc. needed to complete the activity assignments in the course? (Check one blank only)

_____ rented tools and equipment or tools
_____ purchased or owned the equipment or tools
_____ borrowed equipment and tools from a friend or neighbor
_____ used equipment and tools owned by a school or business
_____ was not able to obtain tools
_____ other (please specify) _____
_____

15) Did you make a strong effort to complete all reading assignments for each lesson? Yes _____ No _____

If no, why not? (Check one blank only)

_____ did not have the time
_____ did not have the necessary tools, equipment or ready materials
_____ did not think it was necessary
_____ it was difficult to understand the information in the textbooks and correspondence booklet
_____ it was difficult to read the material
_____ other (please specify) _____
_____

16) After you mailed in your assignments, on the average how long was it until they were returned to you?

_____ 3 days or less
_____ 4 to 7 days
_____ 8 to 10 days
_____ 11 to 14 days
_____ over 14 days

17) My interest in completing the course now is just as high as it was when I enrolled in the course. Yes _____ No _____

18) If you answered no to question 17, what factors would have increased your interest in the course. (Check all blanks that apply)

_____ easy access to tools or having them supplied by the course
_____ having an instructor available to answer questions
_____ decreasing the length of the course
_____ having to do more activities earlier in the class
_____ making the course a high school requirement
_____ other (please specify) _____
_____

19) How do you intend to apply the skills and knowledge you gained from this course? (Check one blank only)

_____ personal or consumer knowledge
_____ plan to work in this area in the future
_____ relates to work presently performing
_____ other (please specify) _____
_____

20) Would you recommend the correspondence method of instruction to your friends or relatives if they desired to take a trade or occupationally related course? Yes _____ No _____

21) Please list the two greatest advantages a correspondence study type of course has for you.

1) _____
_____
2) _____
_____

22) Please list the two greatest disadvantages a correspondence study type of course has for you.

1) _____
_____
2) _____
_____

ADDITIONAL COMMENTS YOU HAVE RELATING TO THE AUTOMOTIVE MECHANICS COURSE:
(Use back of page if necessary)